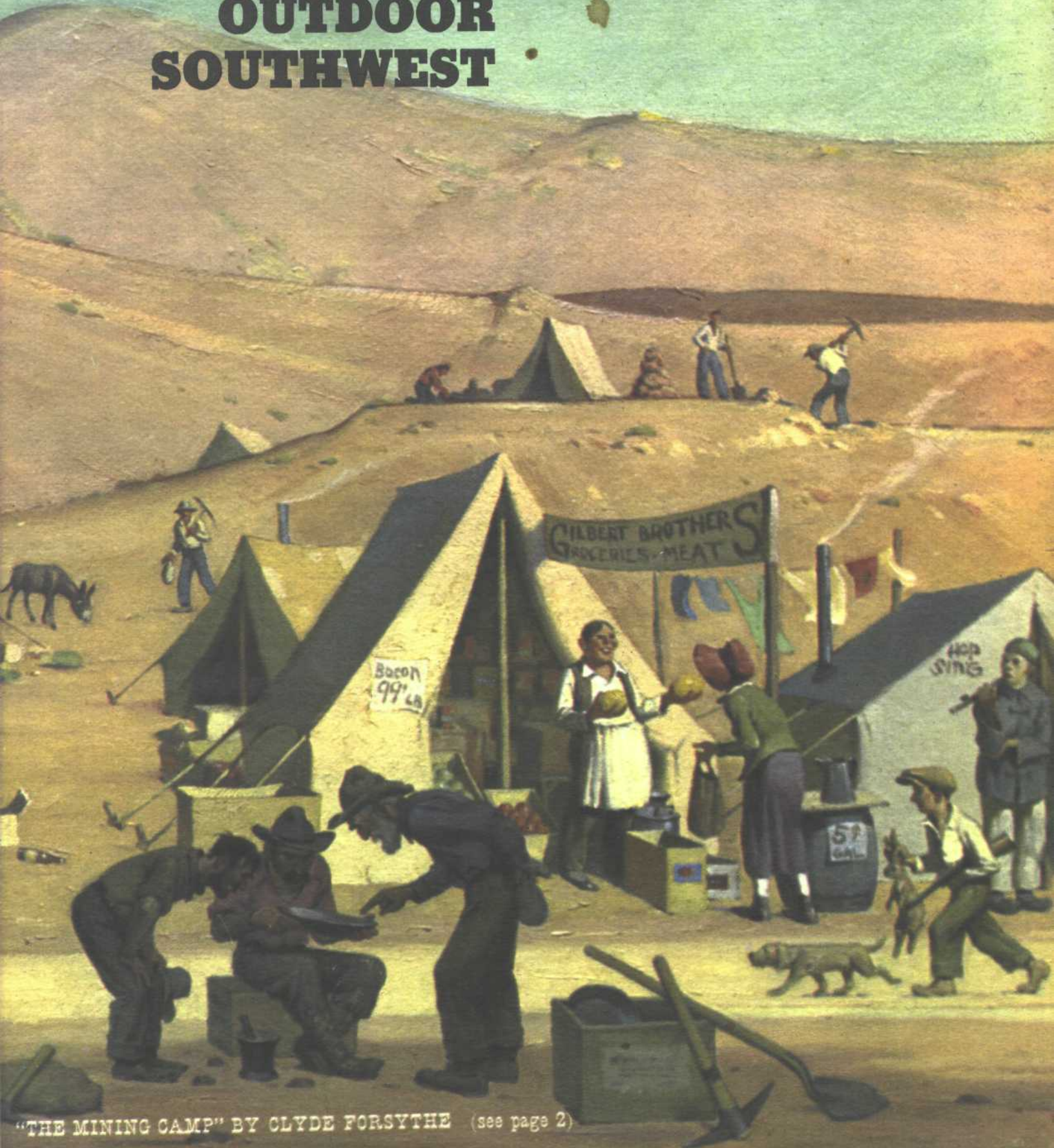


JULY, 1960
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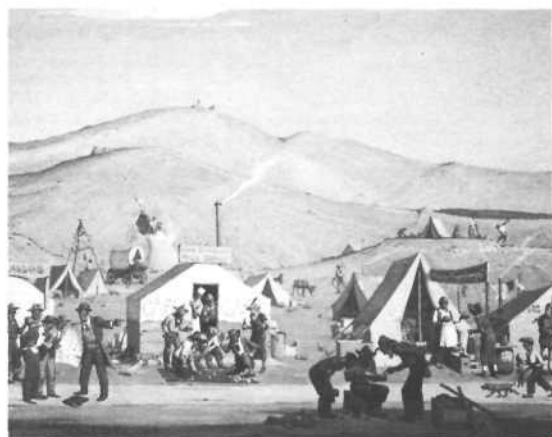


"THE MINING CAMP" BY CLYDE FORSYTHE (see page 2)



The Gold Rush

June cover



The Mining Camp

this month's cover



The Mining Town

August cover



The Ghost Town

September cover

ON THIS MONTH'S COVER:

THE MINING CAMP

THE SECOND IN A FAMOUS SERIES OF PAINTINGS
BY THE DISTINGUISHED
WESTERN ARTIST

CLYDE FORSYTHE

In the first installment (June issue) artist Clyde Forsythe told how he and his wife had participated in the gold rush to Wahmonie, Nevada. They had stopped to buy gas in a "wide place in the road" (Las Vegas) and there had learned about the two-week-old Wahmonie strike. "That was all I needed to hear," wrote Forsythe, and off they went.

On this month's cover—and in the following article—Forsythe describes the first stirrings of a Western mining camp a few hours following its birth.

THE MINERS had named the camp Wahmonie, a Shoshone Indian word meaning "yellow gold." Obviously, our trip to the camp and watching the men along the trail in their various conveyances inspired the idea for "The Gold Rush" painting which, however, was not done until 12 years later. An adventure seems to sometimes need the perspective of time to give it its true value as material for creative use.

And so here we were in the camp of tents and bedrolls. Breakfast for \$1—bacon and eggs at the tent "cafe." Then our hosts, the shabby little partners, Davis and Ryan, came up with a most astonishing proposal: how would we like to stake out a claim? All of the area around the big strike had been staked out—even their own claims were a half-mile from camp—but they said there was open ground near their claims and they would take us there!

Who were we to shrug off this offer? The four of us piled into the Franklin and second-gear up the slope to a table-top area. Davis and Ryan set up the stone center monument, paced off the yardage, and made the corner markers. We put our claim notice in the usual tobacco can and placed it upside down among the stones.

Then the boys allowed as how there was still room for another claim, right next to ours. At this point we were excited enough to decide that my wife's brother-in-law, Harold Gay, who was a mining engineer in Mexico, ought to get in on this "perhaps another Goldfield" strike. Therefore Davis and Ryan paced-off the ground and we put Gay's paper in another can, making us all rich.

Back to camp to register the claims. We then met the "camp's brains," Mr. Joe O'Brien. Mrs. O'Brien was the only other woman in Wahmonie, and they lived in the only wooden residence in camp. It was made of railroad ties, log cabin style, and assorted pieces of tin for the roof. After listing our claims in his book, we drifted into talk, and now the long arm of coincidence was stretched to the breaking point. O'Brien, a man close to 70 years of age, had the speech of a man of letters. He learned that I had worked on a New York newspaper. Yes, he had once been a writer for the New York Herald, but in the 80s they had moved to Leadville, Colorado, for his health.

"Did you ever hear of a mining man in Leadville named Judge Owen?" I asked.

"Do you happen to mean Tom Owen?" O'Brien answered.

"Yes," I replied, "Tom Owen." Said O'Brien: "I certainly

continued on page 42

Chemically, man is mostly water. To maintain life he must maintain the body's water level. On two fronts the summer desert attacks man's ability to sustain his needed water content. First, high temperatures cause him to perspire profusely (a process necessary to cool the body by evaporation—which may result in rapid water deficiency unless water is replaced by drinking). Secondly, because of the desert's aridity, the waterholes are few and far between.

This combination of factors—greater water need, less water availability—has caused some deaths, some discomfort, and a stupendous amount of dread. As a result, the desert has gained an infernal and monstrous reputation—much of it unearned.

A man deprived of liquids would die just as surely—if more slowly—in Nome, Alaska, as he would in Death Valley. The secret of desert—and Alaska—survival, obviously, is to be sure of an adequate water supply. "Desert savvy," such as knowing where to dig for water in a dry wash or how to "milk" a barrel cactus, is no substitute for a five-gallon water jug in the car trunk.

With this in mind,

Desert

magazine of the outdoor southwest

presents its first

SPECIAL ISSUE

in 23 years of publication, theme of which is

Heat in the Desert

Quite naturally most of our stories center in Death Valley, the hottest place in the Northern Hemisphere and perhaps the world. These articles are factual. Hot weather is neither overly-dramatized ("... the cruel, searing deserts ...") nor given a chamber of commerce gloss ("... while high, daytime temperatures are comfortable ...").



Volume
23

Number
7

Contents for July, 1960

¶ Our story begins with the Panamint Indians, Death Valley residents since time immemorial. What effect has living in this land of great heat had on their way of life? Author Ruth Kirk supplies the answers. **Page 4**

¶ In the early days of World War II, the California desert became a training ground for U.S. troops. Weldon Heald, who participated in the "Patton Desert Maneuvers," writes about this period of accentuated understanding of the arid Southwest. **Page 6**

¶ Wrote E. F. Adolph in "Physiology of Man In The Desert," a book that grew out of the 1942 maneuvers: "Once the desert environment is understood, it loses its mystery. The great, open desert soon grows to be a friendly place with an ever-changing beauty of shifting color and shadow." Since war's end thousands of Americans have learned this truth for themselves. Harold Weight takes you to the "friendly places" in the high country surrounding Death Valley—an excellent target for summer travel. **Page 8**

¶ Increasing numbers of people also are visiting the floor of Death Valley during the hot summer months! Last summer, 70,000 persons ventured into the torrid trough. Roland Wauer reports on this travel phenomenon, and what

the Park Service is doing to make these visits safe adventures. **Page 10**

¶ But make no mistake—the desert floor is no innocent playground in summertime. In 1947, two young people became lost on the Mojave Desert for five days. Here, for the first time, is the detailed account of their near-tragic mishap as told by one of the lucky survivors, Mary Jones Blackwell. **Page 12**

¶ For some folks, the floor of Death Valley is home the year-round. How does a young mother raise four children in such a place? We asked Jean Bullard to describe her household's summer routine. **Page 14**

¶ What of the animals and plantlife? Naturalist Edmund Jaeger writes about their struggle for survival in summertime Death Valley. **Page 16**

¶ And now let's go half-way around the world to Iran. William E. Warne tells about the natural air conditioners perfected centuries ago in this ancient—and hot—land. **Page 18**

¶ Fred Binnewies was for six years superintendent of Death Valley National Monument. He writes about his introduction to this fantastic land—and his thoughts on leaving it. **Page 20**

¶ Cartographer Norton Allen portrays hot weather with a map showing highest temperatures ever recorded at principal Southwestern weather stations. **Page 22**

¶ A sampling of month-to-month comments by visitors to Death Valley gives added insight into the weather picture. **Page 23**

¶ This issue also contains:

On the cover: Clyde Forsythe's "The Mining Camp" (story on page 2)

Page 19: Desert Quiz

Page 27: Desert Driving Tips

Page 31: Recipes

Page 31: New Books

Page 32: Utah Travel—Salt Lake City

Page 33: Arizona Travel—Coronado Trail

Page 34: Nevada Travel—Ft. Churchill

Page 35: New Mexico Travel—Puye

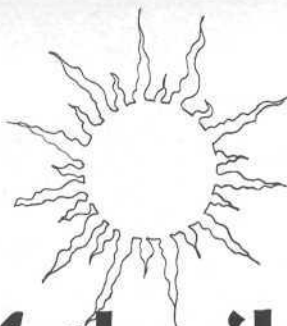
Page 39: Harry Oliver's Almanac

Page 40: Editorial

Page 41: Letters from Our Readers

Page 41: Poem of the Month

Page 42: Publisher's Notes



Indians of the 'Land Afire'

By RUTH KIRK

Mrs. Kirk has spent many years in the Death Valley region. Out of this experience have come many articles in periodicals, and the excellent guide book, Exploring Death Valley. She and her husband, Louie, a former Death Valley ranger, now live in Palmdale, California.

WHEN I WAS a child I went with my parents to buy a basket from Annie Cowboy, one of the Death Valley Indians then living in hovels across from the general store in Shoshone, California.

Father knocked at the door of a "house" too small to shelter much more than a bed and a table. He knocked a second and third time, and then the door opened. Mrs. Cowboy was a squat woman wearing a shapeless blue print dress, with only her bare brown feet and ankles peeping from beneath its hem.

For several minutes, ill at ease, she denied having any baskets. "No," she would say and shake her head. "No baskets. Don't got basket." But she didn't close the door.

Eventually Annie Cowboy stopped saying no, and pulled a cardboard box out from under the white oilcloth-covered table and took out an exquisite bowl-shaped basket about three inches high, with gently flaring sides and a rounded-in top. We could see other baskets in the box, each wrapped in a scrap of cloth to keep it clean, as well as bundles of willow sticks and coils of split willow.

"Won't you please show my little girls how you make baskets?" my mother asked.

But Mrs. Cowboy only looked blankly at my sister and me, and spat a sip of her coffee onto the swept-earth floor of her hovel. She would show us nothing. Not even the other baskets. It was this one or none. My parents bought it: a true work of art from the hands of a woman lost midway between the old days when her mother had roamed the Death Valley country secure in tribal ways, and the new days when her granddaughter would study chemistry in the whiteman's high school.

The tribal history of the Panamint Indians has not been an easy one. Destiny gave them too forbidding a homeland. With only their hands and their ingenuity they had to wrest food, clothing and shelter from the bleak terrain.

There was scant time for the niceties of human life, yet the women developed basketry far beyond the realm of the utilitarian. They could have stopped with merely the functional, but they chose the beautiful.

Probably there were not more than 150 Panamints living in and around Death Valley when the first white men passed through the Valley in 1849. The present Indian population is about half that number. Individual families lived close to springs, migrating when the demands for food sources dictated.

Furnace Creek and Bennetts Well were homesites when the mesquite beans were ripe; upper Wildrose and Wahguyhe served in the pinyon nut season; watered canyons such as Johnson and Cottonwood were occupied while the panicles of sand grass hung heavy with seed to be gathered and winnowed, and the lycium bushes were dotted with red berries that could be eaten fresh or dried and saved to make into a mush. Brush hunting-blinds were built at Grapevine Springs and the headwaters of Cow Creek for shooting mountain sheep; McClain Spring made a good campsite from which to hunt ducks and to scoop up tiny pup fish in baskets. Having enough food was a transitory condition; staying alive was an all-consuming challenge.

Death Valley's heat is notorious, and rightly so. Statistics show that this basin is consistently hotter than any other place on earth. But this has become known comparatively recently. To the Indians, Death Valley was simply "home"—and has been home as far back in memory as tribal tradition reached. They did not think of their land as being uniquely hot, for they had no knowledge of other lands by which to compare Death Valley.

They felt the heat, of course. From the time that the first pale green of spring freshened the mesquite trees until after the last of the pinyon nuts were roasted in the fall, heat was their steady companion. But they expected it, took it for granted; they did not think of the summer-half of the year as anything except hot everywhere.

As late as 1950, when we were living in Death Valley, I amazed one of the women teaching me to make baskets by mentioning on one 95-degree October afternoon that snow already was whitening the ground in North Dakota.

"Mmmmmmm. The mountains, you mean," Dolly said, glancing toward Telescope Peak.

"No," I told her. "Flat land. Just like this," and I waved my arm across the sand hummocks that lead south from Furnace Creek.

Dolly was astonished. She just looked at me, her soft brown eyes probing mine for the truth. I think she finally believed me—but the statement had no real meaning to her.

For years it has been said that the Indians called Death Valley *Tomesha*, "Ground Afire," but logic does not support this notion. The word, which sounds to my ear as though it would be more phonetically accurate written *Dumbeesha*, means, simply, "red facepaint." It referred specifically to the red pigments splashed against the

mud cliffs at the mouth of Golden Canyon, but it came to designate the entire central Valley, from Salt Creek to Mushroom Rock. *Dum* meant "earth;" *beesha* meant "red." Combined, *dumbeesha* meant the red earth pigments that women used to make paralleled stripes on their chins and cheeks; the feminine "make-up" worn until 50 years ago.

There evidently were few specific adaptations to the heat by these tribesmen. One of the high school girls told me that the "old people" used to sleep in the water of springs on hot nights, and Johnny Shoshone, the late patriarch of this dwindling tribe, once refused to tell me tribal legends because it was hot and the "things that crawl" might overhear. Johnny was holding true to his calling as a medicine man. He believed it imprudent to talk of religion while the snakes and scorpions were still active lest they take the "medicine" with them when they hid away for the winter.

The fact that the Indians lived in the Valley during the cool winter months and in the mountains in summer was only incidentally related to weather. Migrating seasonally was a matter of following ripening food supplies. It was more a matter of survival than of comfort.

Furthermore, because mesquite beans do not ripen until after hot weather comes to the Valley with a vengeance, the Indians in pre-white days could not leave for the mountains as early as they might have chosen. Today most of the Indians stay in the Valley only until the closing of school in May. Then they move to Beatty and Shoshone. But, in aboriginal times no one could afford to let their sweat glands drive them out of the Valley while mesquite beans still were heavy on the trees. Nothing at higher elevations offered as rich a promise of food in early summer. Pinyon nuts, for example, don't mature until fall—and a good crop comes only once every three or four years. Mesquite beans, on the other hand, are a dependable crop, and they are easy to harvest.

In May, beans still green and tender were eaten, and were mulled with mortar and pestle—pods and all—to make a sweet drink. In late June and July, mature beans were pounded and winnowed, then rubbed fine on a metate. The resulting meal was moistened and shaped into small balls of "bread" which were sun dried "to make them hard on the outside, soft and sweet inside."

Sometimes more water was added to make gruel, which Dolly told me is good eaten with rabbit meat. "Or you can eat just the little things between the seeds and throw the rest away," Dolly's daughter chimed in. "They're real sweet." This connective tissue was a major source of sweets, but the early day Indians certainly did not "throw the rest" of the mesquite away. At the end of the harvest season they painstakingly cached dry beans in mounds covered with brush. Only then did they move on to the next harvest, which happily would lead them out of the oppressive heat on the valley floor to the relative coolness of the mountains. But even then, if the mountain food supplies proved disappointing, some families might be

forced to return into the Valley to fill their carrying baskets from the mesquite caches.

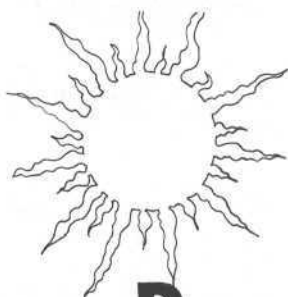
In the spring of 1952 I watched Susie Wilson make a flat basket two feet across, coiling it out of cream-colored willow decorated in black with the roots of alkali bulrushes that she had soaked in ashes. She was going nutting once more, and this fine new basket was to be her parching tray.

"But why does she stitch it so tightly or bother with a design?" I asked her daughter. "It's going to get holes burned into it when the pinyon nuts are shaken and tossed with live coals."

"Panamint Indians always make their baskets pretty," Agnes answered. "That's the right way to do it." ///



GRANDMA DOCK, LAST OF THE PANAMINT INDIAN WOMEN TO KNOW THE TECHNIQUE OF TWINED BASKETRY. SHE PASSED AWAY IN 1958. ➤



With Patton on Desert Maneuvers

By WELDON F. HEALD

Mr. Heald's work has appeared with frequency in this and other publications. His nature-travel articles have won for him a reputation as one of the West's most capable writers.

DURING WORLD WAR II I had a fascinating job. I was one of a group of Army climate specialists in the Research and Development Branch of the Quartermaster Corps. Our business was to find out the exact year-round environment and weather conditions on all global fronts. Such detailed studies and field work were the basis for designing correct clothing and equipment to make our troops efficient fighting machines from the tropics to the poles. For us, this meant assignments in the jungle, on mountain tops, among arctic ice-floes, and even five days afloat on a rubber raft in the Caribbean.

But, to me, my most interesting tour of duty was on General George S. Patton's maneuvers in Southern California's Mojave and Colorado deserts during the summer of 1942. There I learned what extreme heat and dryness can do to a man. I also found out how to minimize the stresses and strains of one of the world's toughest summer climates, and how to adapt to them. In fact, it was General Patton's maneuvers that made a confirmed desert rat out of me. I decided then and there that I would rather live 12 months of the year in our arid Southwest than anywhere else on earth.

There were compelling reasons for these strenuous Army exercises under the broiling sun. In 1942 the Nazi's "Desert Fox," Field Marshal Rommel, and British General Montgomery were pushing each other around in North Africa. A plan, called "Operation Torch," was formulated to augment Allied strength there with American troops. General Patton was picked for the job. An ex-cavalryman turned tank expert, he was ordered to train and equip a North African task force to be ready for overseas duty in late October.

From a military point of view no better man could have been chosen. With characteristic vigor, the General immediately went into high gear. Camp Young rose like a magic city near barren Shaver Summit, 28 miles east of Indio. There he organized the 1st Armored Corps; and from there he gave his men the most rigorous training in desert warfare our army or any other army has ever known.

Although an outstanding strategist, General Patton was short on physiology. His method was to harden the men to desert heat and aridity in the shortest possible time—"toughen 'em up and damn the temperature!" But instead of hardening, an increasing number of the troops became casualties. Something was definitely wrong.

The Quartermaster General assigned Sir Hubert Wilkins and me to this grim human proving ground. Our orders were to check on the performance of clothing and

equipment, both issue and experimental, and to suggest improvements in the light of actual experience in the field. Implied also was a hint that we discover if the multiplying physiological crackups were in any way due to Quartermaster inadequacy. Our headquarters were Blythe Air Base, on the eastern edge of the maneuver area. There we worked in collaboration with the Air Corps Aero Medical Laboratory of Wright Field, and other Army test groups.

My co-worker, Sir Hubert Wilkins, was one of the finest men I ever knew. Australian-born Arctic and Antarctic explorer, he was an expert on desert, tropic and cold-weather clothing. From the beginning of World War II until his death in 1958, at the age of 70, he served as an invaluable consultant to the Defense Department on these subjects. Moreover, he was one of the toughest individuals who ever lived. Powerful, hardy, indomitable, and absolutely tireless was Sir Hubert.

The two of us used and tested each item the Quartermaster had dreamed up for desert warfare. This covered everything, from field stoves to handkerchiefs, and included footwear, clothing, sleeping bags, tents, and other necessities, as well as a few meager luxuries. We found the most comfortable desert summer clothing to be light khaki trousers and an open-necked, long-sleeved cotton shirt. The powerful effects of the sun were felt more in shorts than anything else, and we quickly discarded them. Rubber-soled shoes of any type were heat conductors and soon developed foot soreness. For headgear we preferred an experimental-type helmet built with a detachable frame, which raised it and permitted air to circulate around the top of the head. Although this helmet was surprisingly cool, and suitable for mild activities, it tended to wobble during heavy exercise. Then a regulation helmet is more desirable—pith, plastic, or other good insulating material.

We tested all the tents, too, night and day, and took comparative hourly temperatures. We learned that the addition of an outer canvas covering, 12 to 15 inches above the roof, reduced daytime temperatures 8 to 12 degrees Fahrenheit. The covering not only shades the tent roof, but the free air space between acts as insulation. This is true also with buildings, and many at Camp Young were provided with a second roof.

But the most interesting tests were made with human material. Day after day and night after night for weeks on end that summer thousands of men swarmed over the Southern California desert. Under unbelievably grueling conditions they manned tanks and other vehicles, covered

miles of sizzling hot country on foot, fired every kind of weapon, and engaged in all types of combat. General Patton's maneuvers were for real and they simulated actual battle procedure. The din was terrific and a visitor from Mars might have mistaken it for a maniacal carnival.

As mere observers we were proscribed from slowing down the action with our medico-scientific foolishness. However, Blythe Air Base G.I.'s were made available to the test groups, and with them we went through all the exercises of the maneuvers, minus tanks and heavy artillery. Temporary laboratories were established and Sir Hubert and I took temperatures, felt pulses, and weighed more human subjects oftener than a couple of nurses in a maternity ward. For background we kept a complete record of pertinent weather information while in the field.

The human being's reaction to desert heat and dryness was a relatively new study in the United States. Because water is always a scarce commodity on the desert, commanders were conserving it by trying to accustom the men to a quart, or even a pint, a day for all purposes. This did save water, but it expended men. Their bodies just wouldn't cooperate. On lively skirmishes in 120-degree temperature the perspiration oozed out of me like juice from a grilled chop. In fact, on several occasions I lost weight through sweating at the rate of two to four pounds an hour! Furthermore, the test groups found that men on maneuvers in the burning heat of the desert sun sweat as much as two and a half gallons in 24 hours. No wonder the men couldn't take it. Such mounting water deficits quickly made hospital cases, not hardened campaigners. If the troops were to be welded into healthy, efficient fighting units every gill of water lost during the day had to be made up.

At this point desert rats, prospectors and other old-timers will rise up and say, tain't so. They will recount prodigious camel-like feats accomplished by leather-skinned sons of our Southwestern deserts. In the main their stories will be true. Facts may be somewhat stretched in the retelling, but there are many well-authenticated cases of individuals who have gone without water in the desert for days and still lived. This is particularly true of seasoned, acclimatized men. Nevertheless, Army field data proved

conclusively that in the long run each 24-hour water loss had to be replaced if soldiers were to live to fight another day.

From the mass of figures assembled, we worked out a detailed scale of human water requirements. With it commanders in the field could estimate how much water was needed each day by knowing the approximate average temperature, planned combat activities (reduced to individual kilogram calories of energy), and the number of men involved. Other related factors, when known, such as humidity and wind velocity, could be included in the formula. It was as simple as that.

The test groups also compiled tables on the length of time men could survive without water at various temperatures; suggested methods of conserving body moisture when water is short or unavailable; and predicted the distance men could walk with given amounts of water. In this last investigation we learned that 20 to 25 miles is about the limit for walking in the desert, but whatever the individual limit was, each additional quart of water boosted a man's capability for walking about 5 miles. Thus, if a G.I. walked five miles and quit, the additional water would carry him another five.

But as soon as we disposed of one desert hot-weather problem, up popped another. After the men learned to drink copiously, even while on active maneuvers, some of them developed painful, spasmodic contractions of various muscles. Many people think that these symptoms are due to drinking while doing strenuous exercise. But they are not. They are heat cramps caused by lack of salt.

Sweat contains salt and perspiring

reduces the necessary amount. Unfortunately, man, unlike most animals, seldom feels a craving for salt, so must consciously make up his losses. Salt tablets or salted water in the proportion of one ounce of salt per gallon is usually sufficient. But sweat rates vary from individual to individual, and the amount of salt required differs markedly. Inhabitants of hot countries wisely keep a salt balance by eating highly seasoned foods. Mexicans on the hottest days sit down to meals liberally sprinkled with chili and hot sauces. We who take a light salad and a malted milk when the temperature soars, might well give a thought to our salt balance.

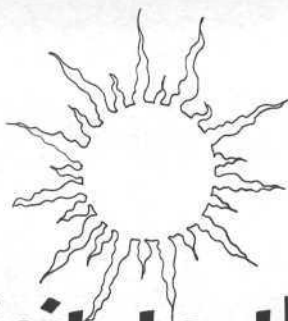
Heat prostration, called heat exhaustion by physiologists, was the most common form of breakdown on the maneuvers. That is true everywhere, and heat waves all over the world claim victims by the hundreds every year. It is really a protective mechanism for an embarrassed and overloaded heart laboring to maintain a proper heat balance. It occurs usually in a collapse resembling a prolonged faint, and the skin often becomes moist and clammy. This reduces the overload on the heart and gives it a chance to recover. We observed many cases of heat prostration. Rest in the shade is the only cure, but a dash of water in the face helps. People who die from heat prostration are usually those with weak hearts or general ill-health.

Heatstroke is our deadliest hot weather enemy, but only two cases came to our immediate attention. It is particularly insidious because there is a popular misconception as to what causes the attack. Most people believe that heatstroke is brought on by

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LEARNING HOW TO LIVE AND FIGHT IN THE OPEN DESERT. MECHANIZED TROOPS LEAVE A DUSTY TRAIL AND CONVERGE ON A CONCRETE HIGHWAY DURING 1942 DESERT MANEUVERS



A Summer Visit to the Panamints

By HAROLD O. WEIGHT

Mr. Weight has had long association with Desert Magazine. He is recognized today as an outstanding authority on mineralogy, lost mines and Mojave Desert history. He and his wife, Lucile, Desert Magazine's California travel columnist, live in Twenty-nine Palms.

TIME WAS—not many years past—when summer tourist travel into Death Valley was not encouraged. When the hot months came and the "Ground Afire" started to burn, resorts closed and National Monument employees and their families moved to Summer Headquarters in Wildrose Canyon in the Panamint Mountains, nearly 5000 feet above the shimmering sink. Only necessary maintenance work and ranger patrols on main-traveled roads continued down below. Death Valley was indeed Death Valley.

But progress has seeped into the Big Sink. Main roads all are improved. State Highway 190 and the Beatty and Trona highways carry more through-traffic each summer. Stove Pipe Wells Hotel remains open to the extent of supplying gasoline and meals. Furnace Creek Ranch store and filling station are open. Scotty's Castle and Wildrose Station offer their usual accommodations. Park Service personnel have abandoned their cool perch in Wildrose for year-round Valley floor living in their modern Cow Creek residential area.

And you, too, now are welcome in Death Valley in the summer. If your car is in good condition and you use common sense, you are not likely to get into trouble, and visiting the Valley when the heat is on is an experience and something to talk about. But I have concluded, from several such *entradas*, that to tour the Big Sink in summer isn't much fun.

If you want a Death Valley summer vacation to enjoy as well as talk about, follow the example of Death Valley inhabitants—from prehistoric Indians through mining boomers and prospectors to the Park Service's recent past—and take to the high Panamints.

So much publicity has been given the "deadly" below-sea-level sink that few even among Monument visitors realize that there is more mountain than valley in Death Valley National Monument. Death Valley is a fault block which dropped as the mountains rose in successive earth movements. It is bounded on the east by the Grapevine, the Funeral, the Black and Ibex mountains and on the west by the Cottonwoods, Panamints and Owl Holes.

While the unfortunate '49ers who gave the Valley its name might remember the great chemical sink best, it was the Panamint Mountains which forced them to abandon their wagons and walk. While the Valley won the lurid stories, most of the mining excitements which brought men to it were in the surrounding mountains.

There are places in all these mountains that rim Death Valley where summer temperatures are quite pleasant, but

many can be reached only by difficult trails through hot and uninhabited areas. In the Panamints, however, you can visit historic sites and ghost camps, follow old trails, climb mountains, see old mines and hunt lost mines all within easy reach of a paved highway and without ever dropping much below 4000 feet elevation.

The high Panamints are accessible from the east by any highway into Death Valley, then through Stovepipe Wells and up Emigrant Canyon; from the west by Olancha or Lone Pine past Panamint Springs Resort then down Panamint Valley to Wildrose Canyon or across the Panamints to Emigrant Ranger Station and up Emigrant Canyon; from the southwest by Trona and up Panamint Valley to Wildrose Canyon.

My favorite is the route from Trona over historic Slate Range Crossing. The wall of the Panamints seen from the Crossing is as magnificent a geological spectacle as any in Death Valley. Now the highway drops smoothly down the Slate Range into Panamint Valley. But a backward glance at the old zig-zag road, built up in places by hand-laid rock, will make clear the torment it presented to laboring freight teams during the mining booms. Nor was it a breeze for later mechanized tourists. I still remember slipping into the deep ruts more than 25 years ago, and knocking the exhaust pipe completely loose from the engine.

A dirt road, right, close to the foot of the grade, where the highway heads straight up Panamint Valley, leads to the adobe ruins of old Ballarat which was the social and supply center for the camps in the Panamints at the beginning of this century. Long after its boom had faded it was the home of the old Death Valley prospectors—such men as Jim Sherlock, Fred Gray, Chris Wicht, Billie Heider, and Frank (Shorty) Harris. It still is the seasonal residence of Seldom Seen Slim Ferge, one of the last remaining prospectors.

A right branch of the dirt road that continues north from Ballarat enters Surprise Canyon and climbs steeply to the 6000-foot-plus ruins of Panamint City, earliest and greatest of the Panamint Mountains mining camps. Its rich silver was discovered in the early 1870s by outlaws holed-up in what was then one of the loneliest and most isolated sections of the West. Two famous Nevada Senators—William Stewart and J. P. Jones—helped make Panamint great. Burning of their mill, drop in silver and lead prices, and a cloudburst that swept the canyon in 1876 combined to destroy the camp.

Inyo County has been doing maintenance on the Pana-

mint City road, but since it is subject to flash floods and is an easy trail to get into trouble on, its isolation does not recommend it for summer tourist trips. The other branch of the dirt road continues past Indian George's old ranch and rejoins the highway. George, who died in 1944, claimed that as a boy he had seen the '49ers struggle through the Valley. His ranch, still an Indian reservation — blessed with water and trees and the magnificent backdrop of the Panamints crowned by towering Telescope Peak — is the beauty spot of Panamint Valley.

The highway enters Death Valley National Monument as it climbs toward the mouth of Wildrose Canyon, about 37 miles from Trona. In the canyon, two miles inside the monument, is Wildrose Station (3600 ft.) which remains open year-round with meals, gasoline, souvenirs, some groceries and cabin accommodations for about 10 people. Reservations for overnight are advisable (Box 397, Trona). According to George Pipkin (who with his wife, Anne, operated Wildrose in the 1940s and early '50s) the station is halfway between Skidoo and Ballarat and during the Skidoo boom, from 1906 on, was an important freight and stage stop with adobe corrals, blacksmith shop, eating house and saloon. It was abandoned and virtually obliterated after the boom, but revived by Cyrus Babcock and his wife after a CCC camp was established in Wildrose Canyon in the 1930s, and has remained open since.

Wildrose Springs is located in the canyon about 1.5 miles above the station. It is now a semi-developed public campground, but travelers are warned to boil the water whose purity made it one of the famous Death Valley watering places in prospecting and mining boom times. Canyon and spring were named for the roses that still grow abundantly, by the Dr. S. G. George party which camped here in December, 1860. George was leading the second expedition to search for the Lost Gun-sight, a silver deposit found by the 49ers during their escape from Death Valley.

Above Wildrose Springs the highway swings sharply left and continues north

through the Panamints. A paved right-branch leads almost immediately to the former Death Valley Summer Headquarters which previous to that had been a CCC camp when the boys were working in the Panamints and building the present foot-trail to Telescope Peak. One ranger remains in residence now.

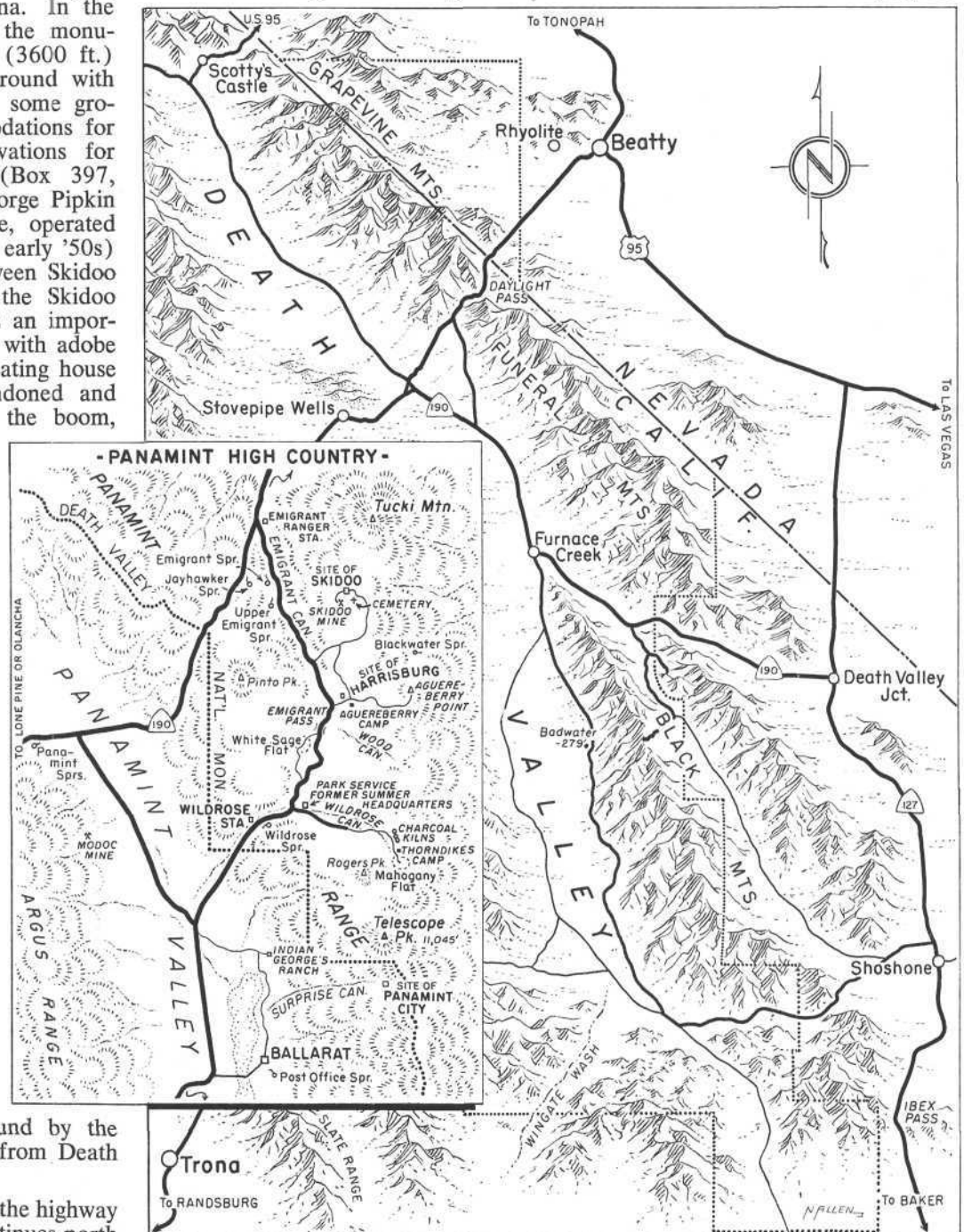
The George party found antimony ledges in the hills beyond and to the south of this location. Writing local history for the *Panamint News* from "Rose Springs" in March, 1875, Dr. George said: "On the 23d (of December, 1860) Henderson and myself, taking two or three days provisions, started down in the direction of the Slate Range. Returning on the

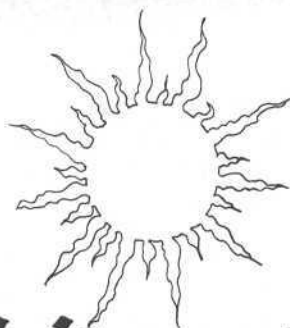
25th, we came up through Mesquite Flat and up Windy Canyon, crossing over into Rose Canyon, and after crossing the summit discovered the Christmas Gift Lode, so named because of the day."

Christmas Gift Lode apparently was the first mine located in the Panamints, probably the first within present Death Valley National Monument (Amar-gosa Gold Mine, reputedly located on the Old Spanish Trail in the late 1850s, lies south of the Monument). Desultory attempts to work the antimony—mainly stibnite—have been made with largest production during World War I.

On that same 1860 expedition, In-

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Protecting Visitors to the Valley

By ROLAND WAUER

This article marks Mr. Wauer's first appearance in Desert Magazine. He is a Park Service naturalist at Death Valley.

WITH MORE and more Americans on the highways, driving across the country in better and more reliable automobiles, it is only natural that summer visitation to Death Valley is on the increase. During the four summer months of 1958, 58,000 persons entered the Valley; in 1959 the summer visitor-total jumped to 70,000.

Most of these people are merely passing through (the shortest route from Las Vegas to Highway 395 runs across Death Valley). A great many travelers make this passage unaware that they have driven through a national monument. But, some summer visitors go out of their way to visit Death Valley during its hot season, not a few of them taking this route in order to be able to say: "I visited Death Valley in the summer!" It's quite a distinction, although some folks from the humid South have confided that the dry desert heat wasn't so bad after all. On one 125-degree day a man told me that it was more uncomfortable "at home in Georgia" when the temperature there was only 90 degrees.

But, in the South you can buy a cool soda-pop at every-other cross-road. Not so in Death Valley. There are few "cross-roads" (few of them offering refreshments), and distances are great. In order to make safe adventures out of summer visitations to Death Valley, the National Park Service regularly patrols the main-traveled roads. In addition, many of the secondary roads are patrolled from time to time (see accompanying map).

The patrol trucks are equipped with two-way radios, emergency food and rations, extra gas, first-aid kit, tools, maps, free information booklets, salt tablets and plenty of drinking water. All patrolling is done in the daytime, unless a heavy rain in the late afternoon or early evening forecasts a flash flood along a main route of travel.

A recent patrol began much like all the others—at headquarters where my truck was filled with gas and I received last-minute information and instructions from Chief Ranger Danielson.

Before I had gone too many miles that morning, I had to roll up the windows to close-off the blast of hot air. A car pulled out of the Furnace Creek Ranch entrance road and seeing my Park Service vehicle approaching, stopped. I had my first "customer" of the day.

I pulled up alongside and greeted the visitors. A bead of sweat rolled down the driver's nose. "Kind of hot down here," he said. "We're looking for a place to camp."

Out came my maps, and after learning what this family wanted in the way of a campsite, I was able to

recommend that they head for Wildrose Canyon and the Thorndike Camp at 7200 feet elevation.

Death Valley has a way of growing on first-time visitors—even in July. The man wanted to know all about this startling land, but a youngster's cry of "Let's go daddy, it's hot," won out. They headed north toward the high Panamints.

The Park Service's protective arm would extend over these campers in the Wildrose region. District Ranger Matt Ryan lives at Emigrant Ranger Station. His friendly ways have helped make this high-country region popular with Valley residents and visitors alike.

I turned south onto the Badwater Road. The green mesquite along the Furnace Creek fan contrasts sharply against the salt pan and the purple mountains beyond. How well Carl Sandburg described this below-sea-level setting when he wrote: "the night-cool limestone white of Death Valley"—except the world around me was hot—not "night-cool."

The Badwater Road—one that is irregularly patrolled—winds along the eastern edge of Death Valley. I stopped at the West Side junction to check a mark I had scratched across the side-road entrance three days before. No tire-mark had disturbed the mark which meant no car had turned-off onto this road during the past 72 hours. There was no need to check for trouble on the West Side road on this morning.

A car approached from the south, and the driver waved his arm indicating that he wanted to talk to me. In a very excited voice the man informed me that "A Chevrolet and two boys are off the road down there by that pool of water!"

I asked whether the boys were injured.

"No," he answered, "but they're sure raising a lot of sweat trying to free that car!"

I continued on to Badwater—but now it was more urgent. Two boys in trouble struck a disquieting chord. In August, 1953, two boys had gotten stuck in Natural Bridge Canyon, and walked out for help. They found a road and presumably sat throughout the hot day waiting for help. Their bodies, naked from the waist up, were found the following day. A senseless tragedy, for their car was easily extricated from the sand after the rear wheels had been jacked-up and the ruts dug by the spinning wheels filled-in with rocks.

I hoped that the two boys at Badwater had kept their

heads and had followed the simple rules of desert safety. A situation regarded as a nuisance elsewhere sometimes becomes cause for panic when it occurs in the lonely desert.

One of the boys was working over the car while the other was lying in the shade. They were out of water and had neither spare tire nor jack. I gave them some salt tablets and all the water they could drink. In a matter of minutes I freed their car, and they were on their way. They were lucky and, I hoped, a little wiser.

I started south once again, and received a call on the radio. Headquarters had been notified of the two boys in trouble at Badwater. They wanted my report. Radio communications throughout the Monument — from Ubehebe Crater to Saratoga Springs — provides a margin of safety in this vast expanse.

Later that day I stopped at Dante's View atop the Black Mountains. Elevation here is 5700 feet, providing a pleasant contrast to the temperature on the Valley floor.

I ate my lunch in the shade of the exhibit which points out many of the Valley's scenic attractions. A movement along the slopes caught my attention. A bighorn ram, browsing along the terrain below, provided an unforgettable sight — a summertime reward!

From Dante's View I traveled to Death Valley Junction where I picked-up the mail for the Valley's summer residents. And then back to Headquarters, alert for signs of trouble on the road ahead.

There are nine rules of desert safety visitors to Death Valley are urged to follow. They make good sense.

1. DO NOT OVEREXPOSE YOURSELF TO THE SUN. Sunburn, sunstroke or heat exhaustion can be very serious. Wear a hat and shirt while in the sun.

2. STAY ON THE MAIN ROADS while traveling through the lower, warmer elevations. These are California State Route No. 190; Daylight Pass Road to Beatty, Nevada; Scotty's Castle Road; and Emigrant Pass road to Wildrose Canyon. These roads are patrolled frequently by Park Rangers.

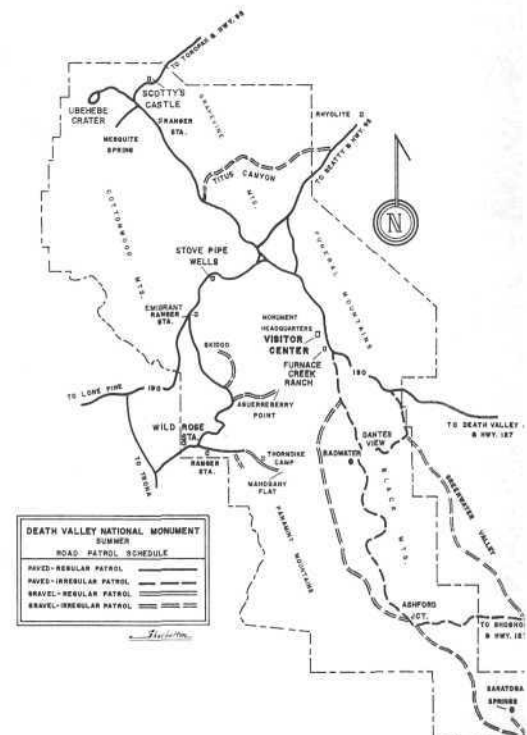
3. CHECK YOUR GASOLINE AND OIL. Service Stations are 25 miles or more apart. Gasoline is available only at Wildrose Station, Stove Pipe Wells, Furnace Creek Ranch and Scotty's Castle.

4. DO NOT DEFLATE YOUR TIRES. Pressure generated by heat is negligible, but heat generated by friction in a soft tire is not. If you become stuck in the sand, you may find that the deflation of the rear tires to about 20 pounds will help you get on your way, but restore normal pressure immediately. If this is not possible, proceed to the nearest service station **SLOWLY**.

5. RADIATOR WATER is available from tanks placed at strategic points along the main roads. Drinking water should be carried, although water from any marked spring or well is safe for drinking.

6. WATCH THE TEMPERATURE OF YOUR CAR MOTOR. Grades are deceptive. Don't lug your motor. Shift to a lower gear if it overheats. Cool the motor if it boils by first turning it into the wind. Do not stop the motor. While it is running at a fast idle speed, slowly pour a quart or so of water over the front of the radiator core. This will cool the motor sufficiently to allow the radiator cap to be removed safely. Fill radiator and proceed.

7. STAY WITH YOUR CAR. Repeat, if trouble develops, **STAY WITH YOUR CAR.** A Park Ranger or another traveler will come by before you can walk to help.



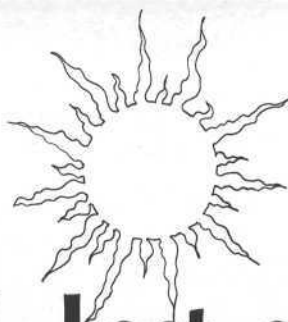
8. BE A GOOD ROAD NEIGHBOR. Report anyone in trouble to the nearest Park Ranger or service station, even if it is inconvenient. You may need help yourself some time.

9. PARK RANGERS are stationed at Wildrose Ranger Station, Grapevine Ranger Station, Emigrant Ranger Station and Monument Headquarters.

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DEATH VALLEY DUNES



Desert Ordeal: Lost on the Mojave

By MARY JONES BLACKWELL

Mrs. Blackwell "came aboard" the U.S. Naval Ordnance Test Station at China Lake, Calif., in 1946. Two years ago she resigned from government service to devote full-time to raising her two children. Ralph J. Rogers, also a China Lake resident, assisted Mrs. Blackwell in the preparation of this article.

IT WAS A typically hot Sunday morning late in the summer of 1947. By 10 o'clock the temperature stood but a fraction short of 100 degrees. Dub Watson and I were sitting in the kitchen of my quarters in the housing area of the sprawling 1200-square-mile Naval Ordnance Test Station near Inyokern on the Mojave Desert. He was examining the second-hand pistol I had recently purchased for \$25.

"I think you were taken," he said. "This gun's barrel is badly pitted." Then he suggested that we get some shells and go out into the desert and give the gun a try.

An hour later we were turning off of Highway 395, at Searles, about 15 miles southeast of Inyokern. Our dusty little road stretched eastward, winding into the Mojave. Despite the mounting heat, we drove for miles. Finally Dub brought the car to a halt and we had our chance to test the gun. A half-hour of misfires and jammed shells convinced us that I had paid \$25 for a wall ornament.

Target practice a failure, Dub suggested that we save something of the morning by continuing our sight-seeing trip. So on we drove, deeper into the bright desert.

Near a thicket of trees a few more miles down the dirt road, we flushed a covey of quail. Sixty feet from the road was a streamlet of clear water flowing out from under a large rock. This is what had attracted these birds to this otherwise barren area.

Following roads which grew fainter as we progressed, we eventually found ourselves winding down a dry wash. Our trail ended abruptly at a wall of gravel and debris where one of the wash banks had collapsed.

"This is the end of the line," Dub said as he headed the car between two large clumps of creosote bush. Then he backed across the wash in an attempt to turn around.

But, there was no turning around here. The wheels dug in. We were stuck.

For two long, dusty, sweaty hours we fought to release the car, but all we succeeded in doing was to mire it even more hopelessly.

We sat in the scant shade by the side of the car to consider our position. Both of us were filthy dirty. My slacks and new blouse were plastered to my body like a bathing suit. It had been so hot that I had not worn socks, and the ground heat was boiling up through the thin soles of my sandals. Dub caught the leg of his jeans on a branch and had ripped the cloth from knee to ankle. We were even then desperately thirsty. We were 18 miles from the spring

where we had seen the quail; Dub guessed it was another dozen miles from the spring to the pavement.

The rest did us good. We decided on one last all-out effort to free the car. First we jacked up each wheel, filling in the trenches beneath with rocks and brush. We leveled away the ground all around the car as best we could; Dub dug in his heels and was ready to push from the rear. I slid into the driver's seat. The engine sputtered. We were out of gas.

I don't like to think of what followed, even after 13 years have mellowed my memory.

We started to walk. All we could think of was liquids—the wonderful spring where we had seen the quail; fresh sweet water flowing slowly from the ground. Liquids—coffee, lemonade, tea, orange juice, beer. I closed my eyes and could see the bright beads of moisture condensing on the sides of a tall cool drink.

We didn't talk much, being too disgusted and uncomfortable for conversation. Every few steps I would have to stop and shake sand and sharp pebbles out of my sandals. The sun was now slanting directly into our eyes.

We stopped frequently to rest, and as the afternoon wore on, these rest stops became longer in duration. Finally the sun dropped out of sight, and still we recognized no landmarks. The period of twilight was all too short. Suddenly it was dark, and with darkness came—for the first time—fear.

I stumbled over a rock and my tired muscles let me fall heavily. Dub tried to get me back on my feet, but I pushed him away, telling him that I was too tired to walk another step. The palms of my hands and my knees hurt, but I was too exhausted to inspect the bruises.

Then the moon broke over the rim of the black mountains, and some of my anxieties left me. We continued on and at 10 that night reached the spring.

It is amazing what water will do for a really thirsty human being. A half-dozen swallows of that wonderful liquid and the world began to look different. Fear and exhaustion all but faded away, and for the first time that day our thoughts turned to food—or the lack of it.

I tore a strip from the hem of my blouse for a wash cloth and we washed a little of the grime away. This, plus a cheery fire, made us feel even better.

Half-jokingly, Dub asked if I wanted to continue on to the highway. "It's not going to be a picnic sleeping on the hard ground," he said.

I assured him that I couldn't walk another step, and anyway, I was sure I would sleep like a baby.

I awoke with the sun in my eyes. My first thought was the awareness of being thirsty and very hungry. When I tried to move I found I was so stiff and sore that lifting an arm was sheer misery. My feet gave me the most trouble. They were swollen, and throbbed when I tried to walk.

Our breakfast was sketchy at best—a long, long drink of water.

And now we made what must surely rank as our greatest blunder. Even now, 13 years later—I cannot understand how two reasonably intelligent adults could possibly have been so stupid. *We started back toward our stalled car.* The logic here was that a search party would look first for the car, and from the air it would be easy to spot. We failed to take into account the simple fact that not one living soul knew where we had gone. The Mojave is a big desert.

We had filled some discarded bottles with water, but by the time we got back to the car our surplus supply was all but gone. We spent the remainder of the afternoon gathering brush and deadwood for a huge bonfire to attract the "searchers."

We were dreadfully tired even before we began the laborious task of gathering the brush, and now the pangs of hunger and fatigue were crucifying us. All we could talk about that afternoon and evening was food—any and all kinds of food.

By nightfall my stomach had contracted into a hard knot of misery. It rolled and groaned and churned until I could not sit still, and yet I was too exhausted to stand upon my raw feet.

It was a miserable night. I laid down on the back seat of the car, but instead of sleep came wonderful visions of thick steaks, juicy slices of baked ham, apple pie and ice cream. When it was my turn to watch the fire, I sat stiffly on an uncomfortable rock lest I fall asleep. I have never lived through a longer night. Tired, hungry, thirsty, fearful—the night seemed without end.

Tuesday morning dawned bright, clear and hot. We were up with the sun, our eyes scanning the skies for airplanes.

Dub gave me the last half-inch of water to drink. I think I was actually more thirsty after that final tantalizing swallow than before—if that is possi-

ble. Given a choice of food or water, there is no doubt in my mind that I would have taken the latter without hesitation.

We scrambled out of the wash to inspect our surroundings, and the thought occurred that if we climbed to high ground we might possibly see the Test Station or Trona or perhaps a highway or well-traveled dirt road.

The nearest mountain seemed to be only a few miles away, and at the base of one was a spot of bright green. Green! Perhaps it marked a spring—water, grass, trees!

So off we went, empty water bottles in hand, to find salvation. The mountain seemed to retreat with each step we took, and the ground between became rougher—broken by a grid of steep-banked arroyos. In our weakened conditions we could not walk far without having to rest. The green of our oasis began to pale-out as we neared it. Weary hours later we came to a few scrub trees. The ground was slightly damp in spots, but there was no standing water.

Our spirits crushed, we crawled into the scant shade of one of the trees and lay exhausted upon the hot earth. I

wanted to cry with disappointment, but before the tears came I fell into a drugged sleep.

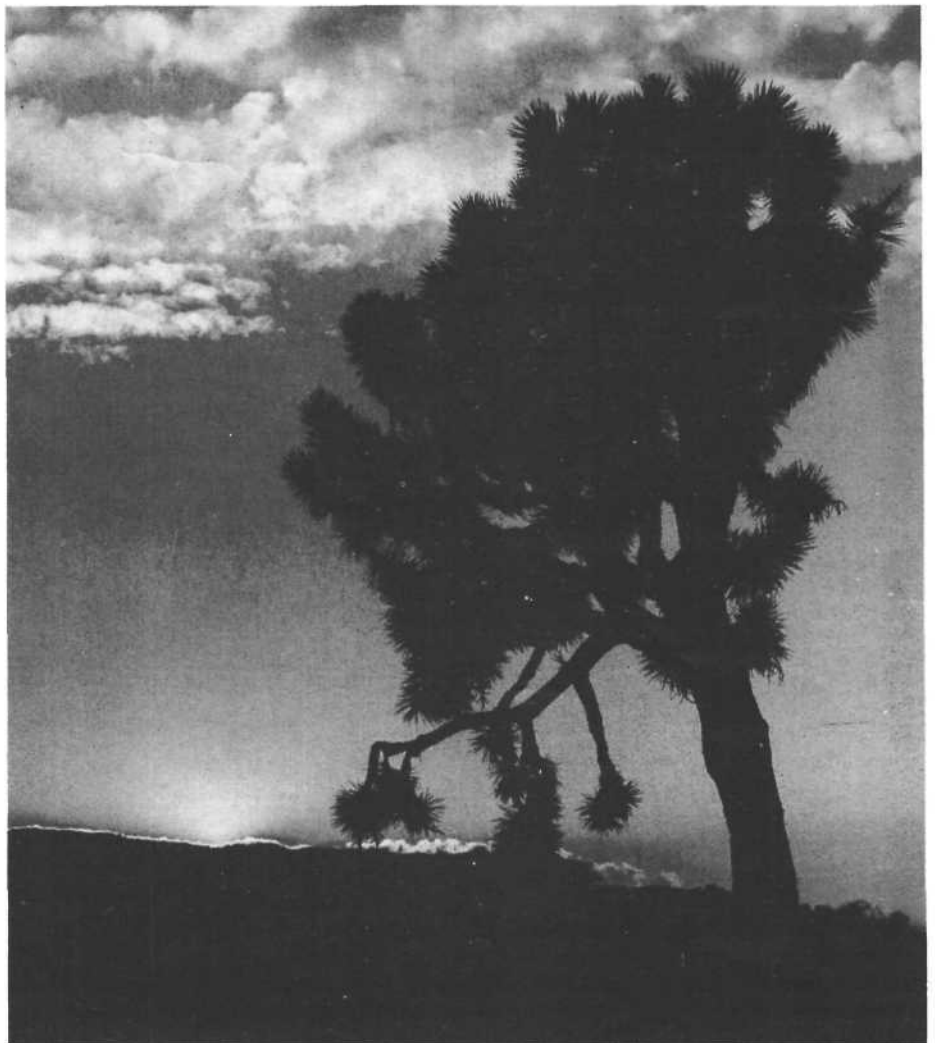
Dub was still sleeping when I awoke. The sun had set. Tuesday was nearly over. When I sat up, an involuntary moan escaped me. This awakened Dub, but he said nothing. We sat without words long after darkness enveloped the desert.

Finally Dub asked me if I could make it back to the car. I was incredulous. I explained that I could scarcely stand. I told him that he had better leave me and attempt to make his way out alone.

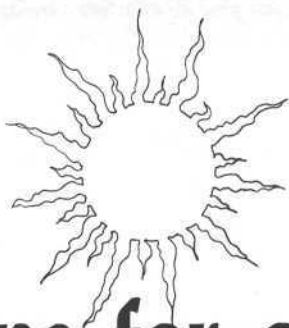
"I got you into this mess and I'm going to get you out," he said. Dub's courage and good nature never failed him.

It was agreed that we would start back for the car as soon as it was light enough to see. Sometime during the night I awakened, and as I lay there staring into the black vault above, the queerest thought occurred to me: one cannot see heaven when the sun is shining. Until that moment I had not seriously believed that we were

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SUNSET ON THE MOJAVE DESERT



Summer Routine for a Family of Six

By JEAN VALENS BULLARD

Mrs. Bullard and her husband, Bill, Chief Naturalist at Death Valley, are passing their third summer in the Valley. A mother of four finds little "free time," but when Mrs. Bullard does, she uses it to pursue her writing avocation. Several of her articles have been published.

RAISING FOUR small children in Death Valley has its own peculiar difficulties, especially in summer when school is out—and the Valley temperatures soar.

We live in Death Valley because my husband, Bill, is Chief Park Naturalist here with the National Park Service. Eighteen permanent Park Service families now live year-round in their new sea-level homes. (The only other people who stay on the Valley floor year-round are the caretaker at Furnace Creek Inn, two families at Furnace Creek Ranch, and several people at Stove Pipe Wells.)

The mechanics and maintenance men, administrative staff, rangers and naturalists arrange their work so that most of it is indoors in summer. The road crew spends its time repairing roads at higher elevations, doing only emergency repairs on the Valley floor. Extreme heat keeps the women and children indoors, much as snow, rain or extreme cold would do in other regions.

"How do you stand the heat?" people frequently ask us. The answer is that we try to avoid it as much as possible. During the hottest part of the day we seldom go outside. When I visit a neighbor's house, I walk fast or run to get there while my body and clothes are still cool. The slower I walk the hotter I get. If I stop on the pavement my feet burn through my sandals.

"No TV and no telephone? You're *really* isolated!" exclaimed one of our visitors. "What do you do with the kids inside all day long in summer?"

With Kent 3, Bill 8, Jan 4, and Wendy 9, we find there is seldom a dull moment. We do a great deal of reading, much more than in winter. The older children read to themselves or to the little ones, or else I read aloud to them. We listen to records, children's and others. The kids play house, or rocket ship, or boat, or museum, or orphanage, or explorers in darkest Africa.

We have a big costume box from which come astonishing combinations when the desire for dramatics or just plain dress-up appears. We spend hours with all sorts of games, blocks, puzzles, tinker toys, clay, cloth, paper, crayons, paints and pipe cleaners. This summer our greatest joy is our new little electric organ which every one of us loves to play—with varying success. The organ keeps us on tune when we sing.

The hotter it is, the less ambitious we are. Our house coolers can do just so much when the roof temperature is 150 degrees. Some days the house is 92 degrees inside. The children often take long naps and then stay up until

11 p.m. or later. We find summer is a family time when we get to know each other better.

Our National Park Service pool for employees is one of the biggest morale factors in Death Valley. We spend every evening there swimming, playing water games, visiting with neighbors. It is too hot to swim before sundown. The grass-bordered pool and swaying palms remind us of a south sea island setting.

Every activity is geared to summer heat, and so is our clothing. Our children wear searsucker shorts or playsuits when not in bathing suits. I wear shorts and sleeveless blouses, and Bill, when not in uniform, wears shorts. This keeps us cool as possible with minimum laundry. One summer job that I can count on as being relatively cool is sprinkling clothes for ironing. I do this in a jiffy by swishing them through the lawn sprinkler. Ironing must be done speedily because the clothes dry so rapidly.

Believe it or not, I use an electric clothes dryer in Death Valley. Although diapers will dry on my clothesline before I finish hanging a big load on a windy summer day, I prefer using my dryer to avoid standing in the blazing sun. Some of my neighbors usually hang out their clothes at night, but I try to plan my housework to have evenings free at the swimming pool.

Cooking is kept as simple as possible. We have no summer company in contrast to many house guests at other seasons. To keep my kitchen cool I plug my electric frying pan or casserole dish into our patio outlet. A turkey, roast or baked ham can be used cold for later effortless meals. I do other baking only when the oven is going for meat. We usually use paper plates and cups to save dishwashing.

Solar cooking? Yes, I learned it in Death Valley. The chef at Furnace Creek Ranch taught me to make delicious clear ice tea: place tea bags and several cloves in a jar of water, and set out in the sun. After several hours of "sun cooking," a fine ice tea concentrate results. I use hotel-size tea bags, making the concentrate by the gallon. During summer we adults consume a great deal of ice tea, so I try variations. Tangerine tea is our favorite discovery (tea bags, tangerine rinds, cinnamon and sugar). Other recipes call for tea bags and nutmeg, cinnamon or citrus peelings.

Bread slices set out in Death Valley summer sun become stale in 10 minutes. Dried bread for stuffing or bread crumbs is never a problem. This comes in handy whenever I roast a turkey.

Did you ever cook your lunch in a child's sandbox? We let the sun cook ours one July day (123 degrees in

the shade) by placing eggs in the sand at breakfast time. They were hard-boiled for lunch. The trick of cooking eggs in the sand was one of the "unbelievable" facts I read in *Illustrated Sketches of Death Valley*, written in 1892 by John R. Spears.

A five-gallon jug of drinking water is consumed every other day in summer by our four children. Our tap water has too high a fluorine content for children whose front teeth are still forming (excessive fluorination causes tooth discoloration), so we obtain the children's water from a nearby tank of defluorinated water. We also use this water for making their powdered milk and for cooking.

One month's supply of groceries for a family of six is quite a load! Our home freezer becomes the most important appliance in summer when the nearest place to buy milk or bread is 40 miles distant. After traveling 140 miles to Las Vegas — locale of our nearest supermarket—it takes several hours to shop for three or four weeks' food (our cash-register tapes average \$150). The last items we buy just before starting the two-and-a-half hour drive home are the frozen foods. By adding dry ice and wrapping our portable cooler in army blankets, we can even bring home ice cream. But, the hardest part about long-distance shopping is having to get along without fresh foods. Lettuce and celery keep two weeks; carrots, cabbage, apples and oranges a little longer—and then we must wait until the next trip to the grocery store.

Most Death Valley residents spend many of their weekends at higher elevations. Of course you can't go anywhere but *up* when you start below sea level, and the high country surrounds us in Death Valley.

Even in the garage our car gets unbearably hot—so hot, in fact, that it cannot be waxed because wax "cooks" soon after it is applied. You can't even rest your hand on metal parts. We must sit on towels or fabric ventilated seat rests. An old-timer suggested wet washcloths on our heads to keep cool. This prevented the heat flush that appeared on our children's faces after about five-minutes of driving. Opening the car vents only introduces a hot blast of air. Relief is in direct proportion to the change in altitude as we drive out of the Valley. We leave for weekends after sundown Friday, returning late Sunday night.

Six pair of skis and a toboggan are

stored under our children's bunk beds (we were transferred to Death Valley from Yosemite National Park). We keep them there because extreme aridity causes damage to wooden articles. Furniture joints loosen when glue dries out, and improperly seasoned wood cracks and warps. A certain amount of water is introduced into the house from the cooler so we store some things inside that would normally be kept in the garage.

Our new ranch-style homes have been built with extended eaves oriented to the sun so our windows are in shadow all summer. The evaporative cooler has ducts to every room. We have a small decorative patio pool in which water sprinkles continually, causing a cooling spray and refreshing sound.

A sense of humor, we find, helps us endure mid-summer heat. Each year we save a supply of special postage stamps for summer use. The blue arctic explorations stamp features a snowy dog-sled, and the cool blue Olympic stamp is decorated with white snowflakes.

One hot summer evening we returned home from a swim and sat in

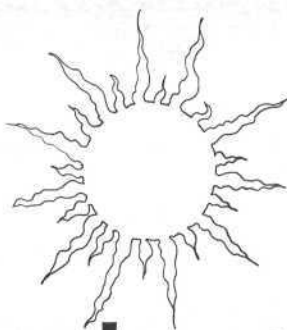
our patio watching the distant salt flats shimmering in the light of the full moon. It had an ethereal beauty, strangely moving. Although it was 11 p.m., Kent and Jan, our two youngest, were also taking it all in as they happily pumped their swings side by side. Other nights we have witnessed truly spectacular thunder and lightning displays. Flashes of lightning touched the distant Funeral Mountains with eerie light as the thunder rumbled ominously through Death Valley. Relative coolness is only one of the night-time compensations.

In an old account of Death Valley written over a half-century ago, E. Alexander Powell said: "For fully half of the year, Death Valley is as healthy a spot as any on the continent. During the other half, however, it is a sample package of that fire-and-brimstone hell of which the old-time preachers were wont to warn us. Indeed, the hereafter could hold no terrors for a man who was able to survive a summer in Death Valley."

Since we are now experiencing our third summer in Death Valley, it would appear that we Bullards need have no fear of the hereafter. ///



WENDY BULLARD, 9, SQUIRTS HOSE TO COOL SLIDE SO HER SISTER JAN, 4, AND BROTHER KENT, 3, CAN HAVE SOME FUN. WITHOUT WATER, SLIDE CAN NOT BE USED IN SUMMER. ➤



A Naturalist Looks at Summer Heat

By EDMUND C. JAEGER

Dr. Jaeger, one of the world's most eminent authorities on the natural sciences of arid lands, is a regular contributor to Desert Magazine. He has authored several books on desert subjects.

MUCH HAS BEEN written about how man relates himself to the high temperatures of the desert summer. But how about other animals and the plants? How do they adjust their living habits to the torrid temperatures? To understand their summer problems we must bear in mind at the outset that the mammals, birds, reptiles and insects can move about to seek coolness, but plants, most of them perennials, are at the disadvantage of being anchored to one spot and made to take whatever comes along in the way of weather.

The human traveler moving about on the floor of wildly beautiful Death Valley in midsummer, when the day shade temperatures average from 115 to 120 degrees or more, is bound to be impressed with the near-absence of animal life of any kind. This is especially true between 10 a.m. and 6 or 7 p.m. when the great heat is on. The animals, especially mammals and reptiles, are hidden from sight because they have sought shelter in burrows, beneath rocks or in other places where the direct rays of the sun, or conducted heat from the hot ground-surface air layers, cannot reach them. If possible these creatures go deep enough underground to find temperatures very much below those at ground-level. Even a foot of insulating earth often helps enormously, and many of the skillful diggers, such as the kangaroo rats (*Dipodomys*), go much deeper, where the temperature is about 85 degrees or less.

There in their underground retreats the animals find not only bodily comfort, but greater humidity so that they lose less body water by evaporation from the lungs while breathing. Evaporation from the lungs, used for heat regulation of the body, always decreases when increased amounts of water vapor are in the air. It has been found that the absolute humidity in a burrow can be three to four times higher than the simultaneous humidity outside.

Body water is further saved by desert animals through the greater concentration of solids in their urine. This concentration is almost four times that of man and two-and-a-half times greater than in the white rat. The faeces of kangaroo rats are exceedingly dry, too—about six times as dry as in white rats when eating the same kinds and amounts of food.

The fur of mammals and the feathers of birds are an important aid in keeping heat from entering the body from the surrounding air. It reduces the "heat load," as the physiologists say, and thus is of advantage in water economy.

The hottest part of the summer day in Death Valley is around 4:30 to 5:30 p.m.; the coolest just before sun-up.

Appreciable cooling does not occur until some hours after sunset since the rocks and soil tend to store the heat received during the sunny hours. Midnight temperature of 108 degrees is not unusual in July! Usually mammals, of which the rodents are greatest in kind and number, come from the burrows to feed only when the temperature drops to near 95 or 90 degrees, and thus it is possible that on the warmest nights these animals remain in their comfortable underground quarters.

Since kit foxes live in deep burrows, they spend their daytime hours in comparative comfort. Badgers are scarce on the Valley floor, but because they are excavators of deep tunnels they too can escape the discomforts of intense above-ground heat. Coyotes are found in considerable numbers on the Death Valley floor where they hunt rodents at night. Some of them may go to cooler mountain retreats during the day, for they are long distance travelers, often doing their hunting many miles from their daytime habitats.

One would think that jackrabbits, which ordinarily do not enter burrows, would have difficulty surviving through the time of summer heat, but many are seen around irrigated areas in the Valley all summer. Since jackrabbits have no sweat glands to help them reduce body temperature, they would seem ill-adapted to this country.

Reptiles, especially snakes, must seek shelter in underground retreats or else bury themselves deep in sand or in holes under the shade of bushes (mesquite and others) during the hours of torrid heat. Desert lizards spend the hottest part of the day under rocks or in deep rock crevices. It has been observed that many of these creatures are hard-put for food during the hottest seasons, especially the vegetarians such as the chuckawalla. It is reasonable to believe that though green food is much preferred, dry or near-dry leaves may be their portion. The lizard that probably fares best in summer is the swift-moving gray-white gridiron-tailed lizard (*Callisaurus ventralis*), but it is seen only at the opening and closing hours of the day. To get out and move about on the sun-baked sand and to breathe the intensely-heated midday air near the ground would prove fatal. If these creatures become too warm a kind of paralysis overtakes them.

Of great interest is the fact that the internal body cavity of many of the desert lizards is lined with pigmented membranes of deepest black. The question arises concerning what extent this velvet-black pigmented surface reacts to keep out heat waves of certain parts of the solar spectrum? We know that transmission of ultra-violet rays

through the dark skin of several desert lizard species is absolutely nil, and that protection of the underlying tissues by the horny part of the skin against any type of solar radiation is most efficient.

We are now led to ask why certain desert birds (ravens, wheatears of the Sahara) have dark to black coloration of the feathers, and some insects (darkling beetles) have black coloring of the body armor of chitin? What advantage or disadvantage is it to have a body covering which absorbs rather than repels heat? In midsummer, probably for very good reason, the darkling beetles are out feeding mostly at night.

In summer Death Valley shrubs are for the most part a sorry looking lot. They are gray, dry and often almost leafless. Many, like the encelias, drop their leaves to conserve moisture; others, such as the creosote bush, show leaves much shrunken because of water loss; still other plants, like desert holly, retain some of the now-leathery leaves which allow scarcely any water to pass outward through them. Such shrubs are in a state of summer moisture-conserving dormancy. Their often resin-filled stems, even their roots, have only slight amounts of water in them. Because of the near-moistureless soil, no root hairs grow on the plants. The desert fir (*Peucephyllum*) stays quite green because its roots go deep, often into the crevices of rock; and this plant is suspected of absorbing moisture from the air through its leaves. It surprises many to learn that even the oven-hot air has some moisture in it — enough, at least, to be measured. It is possible that some highly-adapted plants may be able to utilize this moisture, especially at night when the humidity is highest.

The mesquite growing in the central areas of the Valley stays green all summer as its generous crops of long sugar-filled beans ripen. Often these trees are about the only sign of natural green, except for the cultivated areas of Furnace Creek Ranch, visible on the Valley floor from the surrounding mountains. Mesquite is a very deep-rooted plant, able to tolerate the salts and alkalies that occur in the Valley soils.

A surprising number of birds are all-summer residents of Death Valley. They can be seen about the numerous waterholes, seeps and trickles of water which issue from rock crevices in the canyons, as well as at Furnace Creek Ranch and Stove Pipe Wells Hotel where there are trees and grass. A few insect- and spider-eating rock wrens,

numbers of ravens and English sparrows are among the most common of the land-birds which endure the harsh desiccating summer heat. As might be expected, they are active feeders only during the coolest parts of the day, rising at the very first hint of dawn. When the crafty raven is seen in the midday sky he is usually high enough aloft to be above the layers of most highly heated air. On the ground some ravens are seen resting in the shade, but others seem to go about their business oblivious of the heat. The roadrunner's tracks (along with those of sidewinders, coyotes, kit foxes, millepedes and darkling beetles) are found on the fine dune sands, showing that this hardy bird braves the heat of summer.

I am sure few realize how great a variety and number of birds pass over sere Death Valley in summertime. Many go over at night, but perhaps quite as many fly over by day. Mrs. Matt Ryan, who with her ranger husband spends the summer at Emigrant Ranger Station, tells me that many small birds of various kinds, from warblers to blackbirds, come to their pool and feeding tray. These birds are often exhausted and near-dead from thirst, but the Ryans are able to save many.

"We get many egrets," she says, "and mud hens and even sea gulls land where there is water; occasionally a killdeer or duck enjoys a chance to get a bit of wetness. I have known of small birds coming into Stove Pipe Wells Hotel in summer and dying by the hundreds, too weak from thirst and hunger to drink and feed when they get there. I constantly keep food and water available here at our station, and some of the revived songsters stay with us for several days. A young pintail duck stayed at our pool for three weeks. It seems very strange that most song-birds, when they come

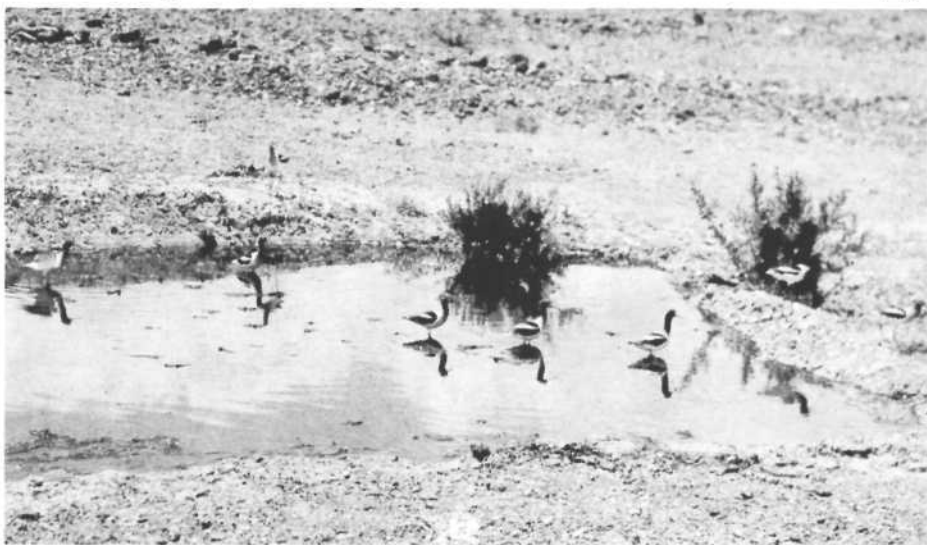
to our pool, first open their mouths wide, pant, and sometimes wait before drinking, but the desert black-throated sparrows seldom stand around panting. They go right to drinking as soon as they arrive."

August is the humid month when the angry storm clouds gather over the surrounding mountains. With them may come not only unbearably hot and stuffy days, but also big downpours of water in the form of local cloudbursts. When these rare storms occur, great sheets of water rush down the mountain slopes or, gathering in the canyons and narrow slot-like gorges, crash madly down to the Valley floor with a great roar.

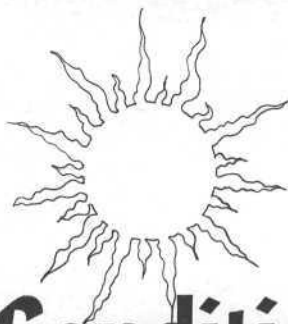
These flash floods take a mighty toll of wildlife. In 1942 a cloudburst on the west side of the Panamint Mountains sent a noisy wall of water 30 feet high down through narrow corridor-like Surprise Canyon. With impressive destructive power the swirling water tore out trees and shrubs, moved huge boulders and drowned or crushed under moving rocks almost every living creature—from small rodents to reptiles and insects—in its path. It was all so overpowering and sudden that there was no escape.

Cloudburst waters spreading over the sands and gravels of the bajadas and Valley floor may awaken to sudden luxuriant growth some of the summer-annual plants, such as the low-growing yellow - flowered pungent - leafed *Pectis papposa*, and the handsome spreading-stemmed honey-sweet, *Tidestromia*. Then, for a few days there is a show of color on the land and sweetness in the hot desert air. Several times while crossing Death Valley in summer I have taken joy in the sight of these flourishing fields of handsome plants on an otherwise scorched land—a bit of greenness that comes as a gift of an angry cloudburst.

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AVOCETS AT A POOL ON DEATH VALLEY FLOOR



Natural Air Conditioners of Iran

By WILLIAM E. WARNE

This is the fifth in a series of articles by Mr. Warne based on his observations in Iran during his work there as Point 4 Administrator. Mr. Warne currently is Director of the California State Department of Agriculture.

REAL TRIPLE-PLATED high-octane heat has a depressing effect on the desert dweller. Some like to pooh pooh heat and to pretend to ignore it, but even those who love the desert most concede that a blazing mid-summer day on the shadeless sand can be more than uncomfortable. Such a day can be deadly.

Few, indeed, are there among the initiated who have ever permitted themselves to be really endangered by the sun. But the whole fraternity will exert utmost ingenuity to discover a way to keep cool—and so often without success.

That has been my experience in the Southwest, and in other arid parts of the world.

When I saw the village on Hormuz Island, a few miles off the South Iranian coast at Bandarabass in the Gulf of Oman, the day was glaring hot. It was only late spring in 1952 by the calendar, but the sun beat down, and its light reflected from so many directions—from the glassy sea, from the rocky hills, from the old stone fort, from the unrelieved mud and stuccoed walls of the town—that my eyes throbbed even when squinted to a slit.

Dust from iron oxide ore, being loaded into a leaky tub standing a few yards offshore, sifted over everything until even the sweaty hair of an urchin who was sailing a shingle at the water's edge was coated a dark brick red. There were several of us in the motorboat as it swung toward the dock. The motion gave us some breeze, but we were hot, nevertheless. Everything was hot to the touch.

On seeing the village close at hand, I was overwhelmed with a depressing sense of heat, discomfort and futility. Why on earth, I asked myself, had the Portuguese founded here one of their early city-colonies, like Macao in China and Goa in India? Well, I told myself, they had abandoned it centuries ago, leaving nothing but their blood in the sand—and in the islanders, too, I added, after a closer look at the self-same urchin. The old fortress is not entirely in ruins. It is still formidable, but bleak, dour, forbidding and, I thought, on this day the stones will be scorching hot.

I missed the thrill that so often comes on first visiting a storied place. Instead, I sat simply being uncomfortably hot, looking down at my knees as the boat inched toward the landing.

A strange little memory had come vagrantly into my mind. I remembered as a boy in the Imperial Valley of California running barefooted across the road on such a

day, suffering exquisite torture from the super-heated sand, stopping to stand on one foot in the pitiful shade of a cocklebur, only big enough to cast a foot-sized shadow with its withering leaves, holding the other foot in my hand, in a hopping posture, and finding the sole painfully hot to the palm!

The boat bumped the dock.

My good friends Ardeshir Zahedi and Abol Radji, who had come from Teheran with me in the plane, were obviously disappointed at my lack of enthusiasm. I regretted it but found difficulty throwing off the mood.

Men were plodding to the water's edge with baskets on their heads filled with the dry red ore. They splashed right in and walked to the side of the small ship, where another man reached down and lifted the basket to dump it. By the time the men got to the ship, the water came up to their shoulders, and the low swelling waves splashed in their faces. What an extraordinary longshoring method, but in the heat of the day it had its advantages. It did not cheer me up.

The place was virtually without fresh water. We were contemplating opening a salt mine, or rather reopening one that the Portuguese once operated. It was a good prospect, clearly enough. Even so, the place seemed sparsely endowed.

A jeep took us to the mine where the red oxide was obtained. It was distressingly hot, and the red dust was chokingly dense. We stopped at the fortress. The impression was one of a massing of stone, no form but bulk.

"Well," Ardeshir said, mopping his brow and giving up trying to snap me out of my mood, "the colonel in command has invited us into his house for tea before we return to Bandarabass."

"By all means," I said, trying to appear polite. "Please accept for us."

We entered a barren yard through a gate in a mud wall. We trooped indoors and were seated, village style, on a rug on the floor of a square room unrelieved by furniture. I put my hat down beside me and waited for a servant to bring the tea.

Quickly, I became aware of a wafting cooling breeze circulating through the room. There had been so little air stirring outside that I was surprised. I glanced around. No one was waving a fan. I had not really expected to find that this was the answer, for the breeze was much too steady and too strong.

Desert Quiz

Here are 20 questions pertaining to HEAT and HOT PLACES. A passing grade is 11 correct answers; 12 to 14 is fair; 15 to 17, good; and 18 or more rates excellent. (If you flunk this test, blame the weather!) Answers are on page 30.

1. Death Valley National Monument was established in 1949. True.... False....
2. Highest official temperature ever recorded in the United States was 148 degrees. True.... False....
3. Death Valley lost its claim to having the lowest land in the United States when Alaska became the 49th state. True.... False....
4. 100 degrees Fahrenheit is warmer than 100 degrees centigrade. True.... False....
5. Death Valley Scotty had a career as a professional showman before building his castle in Death Valley. True.... False....
6. Ground temperature rarely exceeds air temperature. True.... False....
7. The Panamint Indians of Death Valley are a small offshoot of the Shoshone nation. True.... False....
8. A corner of Death Valley National Monument lies in Nevada. True.... False....
9. The Funeral Mountains are east of the Death Valley trough. True.... False....
10. Desert mirages are more common to the summer than the winter months. True.... False....
11. Contrary to popular belief, the creosote bush will die if it does not get water at least once a year. True.... False....
12. Because of the great heat, bird-life is absent in Death Valley during the summer months. True.... False....
13. Towne, Daylight and Jubilee are mountain passes leading into Death Valley. True.... False....
14. Deer is the only game that legally can be taken by hunters in Death Valley. True.... False....
15. Tight-fitting clothing which hinders evaporation of body perspiration is not recommended for summer wear. True.... False....
16. Home evaporative coolers work best in humid weather. True.... False....
17. Like the Grand Canyon in Arizona, the Death Valley trough was carved by action of a river. True.... False....
18. Clouds are practically unknown in summer desert skies. True.... False....
19. Because underground burrows are so hot, desert animals shun them during the hottest part of the day. True.... False....
20. William Lewis Manly was a pioneer Southwestern weatherman. True.... False....

"Do you find it cooler here?" Radji asked, apparently noticing I had revived somewhat.

"Yes, indeed," I said. "It is quite pleasant, and I am surprised that there is such a strong circulation of air in here. Those windows seem small and the air outside is still."

"Oh," Ardeshir said, breaking in. "It is the natural air conditioning. This house has a Hormuz fan."

I had become aware of the curious construction of the ceiling. It had four large vents. I now could feel that the breeze was settling down from one of them.

There could be no desert cooler here. There was no power on the island to operate the fan.

"Natural air conditioning?" I asked skeptically, yet with increasing interest. There was the breeze as evidence that the words had some meaning.

"Here on Hormuz Island many houses have a wind trap on the roof," Radji, an engineer, began to explain. "It is just a large box with the four sides opened to the four wind directions, and funnels leading from these opening through the ceiling below, directing such breezes as may stray about onto the heads of the people who sit there."

"The slightest breeze is concentrated by the trap and funnel," Ardeshir added. "There is usually a little wind from some direction, and the trap faces four ways and operates whatever the direction of the breeze."

"Not as good as a refrigerated, forced-air system," Radji matter-of-factly went on, "but it works."

Yes, I thought, it works.

And again I had found something entirely new to me, hidden away in a desolate impoverished cast-off village, whose merit only a few moments before I had completely overlooked, even rejected.

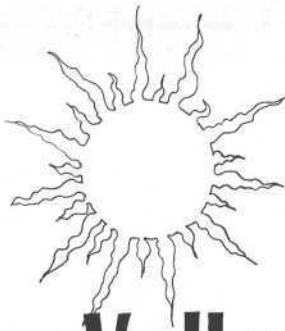
"Who invented this thing?" I asked, after we had climbed to the roof to inspect the trap.

They are very old, I was told. All people hereabouts know how to build them. They are not used in many places because there has to be some breeze to trap, but here on Hormuz Island they are considered quite successful.

My depression had left me. It was a little nearer evening and the sun was not so unbearably bright. The heat seemed to recede a little. We began our trip back to Bandarabass in good spirits. ///



BOXLIKE STRUCTURE LOOMING ABOVE THIS HORMUZ ISLAND BUILDING IS A WIND TRAP



On Leaving the Valley Called Death

By FRED W. BINNEWIES

During the past several years there has been an acceleration in the interest in Death Valley, due, in large part, to the good work of Mr. Binnewies, the National Monument's superintendent from 1954 to the early part of this year when he was named assistant superintendent of Glacier National Park.

IT ALL BEGAN with a phone call in April, 1954, from the Regional Director of the National Park Service at Santa Fe.

"You've been selected to be the new superintendent of Death Valley National Monument," he said.

All I could answer at first was: "What? Death Valley?"

Immediately I had visions of barren wastes and of unbearable heat. I told my wife, two boys and daughter about the transfer and they were as flabbergasted as I was. At the time we were at Bandelier National Monument—6000 feet high and surrounded by the Santa Fe National Forest of northern New Mexico. It would be quite a change in scenery, we agreed—especially with summer coming on.

One of the Park Service employees met me in Las Vegas, Nevada, and drove me the 140 miles to Death Valley. In all that distance we passed but three places of habitation, and they were very small ones at that.

Like most people who had only read about the desert, I was totally unprepared for what met my eye that day. Even after living in the wide open spaces of New Mexico for several years, I had not comprehended what the true vastness of the desert could be. To be able to see 100 miles is commonplace in the Death Valley country.

They say first impressions are best. This certainly held true that day. It was made to order: bright sunshine, a few puffy clouds in a sky that was bluer than any other I had ever seen, the temperature around 100 degrees which, in that dry atmosphere, is comfortable. About 16 miles from headquarters we topped a low pass and started the long descent down Furnace Creek to the Valley floor. I kept looking for vast areas of drab sand, but instead we passed mile after mile of multicolored rocks of pastel hues. About half-way down the pass we came to buff-colored old lake bed deposits that had been shifted and piled on edge in an endless variety of shades and forms. The sun created light and shadow effects that are past describing.

We emerged suddenly from the mouth of the wash and Death Valley spread out before us—a truly awe-inspiring sight. Across the 12 miles of nearly-flat Valley floor rose the massive Panamint Mountains topped by 11,049-foot Telescope Peak. The Valley spread endlessly to the north and south—a great trough 140 miles long and from 4 to 16 miles wide, with over 500 square miles below the sea-level contour.

This then was my introduction to Death Valley, and I

viewed it with mixed emotions. The vastness was overwhelming and somewhat frightening. With only sparse vegetation for scale, it was difficult to judge distances, and I knew something of the feeling that the first emigrants must have had in 1849 when they descended into the Valley after a long trek from Salt Lake.

It takes time to get used to Death Valley. I shall never forget the feeling I had one day after having been there three months. I was driving down Emigrant Canyon on the west-side of the National Monument. At the point where the canyon opens to give a view of the entire northern portion of the Valley, an inexplicable realization came to me. Very suddenly I knew what it was all about—I understood the desert. After that, while I respected the desert, I had no fear of it. And believe me, you must respect this desert or it may get the best of you.

Everyone who has heard of Death Valley has listened to fantastic stories of the intense heat here during the summer in which little or nothing can live, and so the other National Park Service employees (except for one ranger) and I moved out of the Valley that first summer. As had been the custom for many years, we went to the summer headquarters in Wildrose Canyon in the Panamint Mountains. The camp is 4300 feet above sea level—20 to 25 degrees cooler than the floor of the Valley.

It was necessary during the course of the summer to make several trips down into the Valley, and I found, largely due to the extreme dryness, that it was not nearly so bad as feature writers would have you believe. It was hot, to be sure—up to 128 degrees—but with the humidity at five to 10 percent, the weather was far from unbearable. Consequently, the next year I asked the other employees if they would like to try living in the Valley all summer instead of moving out. They all agreed to give it a try. All of us stayed the entire summer and strangely enough, small babies seemed to have less heat rash than would normally be expected in more temperate climates. Since then the summer headquarters has been almost abandoned and the employees live at the Monument headquarters all year.

High temperatures hold a certain fascination and interest, but the Valley's truly delightful winter weather cannot be ignored in this report. From about the middle of October to the first of May, Death Valley has as wonderful a climate as can be found anywhere. Temperatures rarely reach freezing at night, even in January, and the clear bright days are usually in the 60s and 70s. That, combined with the very dry atmosphere, makes Death

Valley a most pleasant place to visit or to live in.

I think that one of the most interesting surprises I found in Death Valley was the color. Far from being drab, the mountains and rock formations are a riot of shades of red, brown, buff, green, yellow, purple, pink, white and black. Just take the drive to Badwater, 280 feet below sea level, and near the lowest land in the Western Hemisphere, or through Titus Canyon, and you will see what I mean. Go up to Artists Palette and you will find at least 13 different colors in the rocks that look for all the world as if a great artist had spilled his paints over them. I have spent hours watching the play of light and shadow on the mountains, canyons, gullies and hills, and they are forever changing, forever challenging, and forever beautiful.

The magnificent works of nature in the desert are appealing in themselves, and so are the people who live in this magnificent setting. I did not meet the famous Death Valley Scotty (he died in January, 1954), but it was my privilege to know some of the old prospectors—Seldom Seen Slim, Buck Johnson (the Duke of Muddywater), Dolph Nevares and John Thorndyke—rugged individualists who have spent most of their lives in and around Death Valley.

John used to kid the dickens out of me over my initiation to cloudbursts. About the middle of August, 1954, there was a general rain that covered most of Death Valley. It only amounted to three-quarters of an inch and I thought little of it until the next day when the road reports started coming in from the rangers. I could scarcely believe them, never having seen what a cloudburst could do in the desert. When the final tally was in, nearly 80 miles of roads were covered with from a few inches to two or three feet of gravel and silt. In many places it was impossible to tell that a road had ever been there.

It was the worst cloudburst that John could remember, and he thought that it was for my special benefit. "Might as well find out about such things in a hurry," he said. We worked hard for three months cleaning up the mess. Although it rains infrequently in this desert—only about two inches a year—any little storm should not be underrated. It can really cause a lot of trouble.

It was my privilege to serve as superintendent of Death Valley Na-

tional Monument for nearly six years. Among friends who have a deep interest in the area are members of the Death Valley '49ers, an organization of people who have as their primary purpose the establishment of a museum in which to tell the stories of the history, geology and biology of the Valley. Several employees of the U. S. Borax and Chemical Corporation (formerly the Pacific Coast Borax Company of 20 Mule Team fame), helped me to know and understand Death Valley. These are people who have been coming to the desert for years, who know and love it, and pass their enthusiasm on to others as I would also like to do.

Friendships, warm and enduring, are part of life in the desert. The renowned artist and his wife who have become "Grandpa" and "Grandma" to the Death Valley community, and all of my associates in the National

Park Service there made living in Death Valley a rich and rewarding experience.

Is it any wonder then that it was with mixed emotions that I received word earlier this year of my promotion and transfer to Glacier National Park? My fellow employees jokingly suggested that I was going from the frying pan into the deep freeze.

Once you get the feeling and the spirit of the desert, and particularly of Death Valley, you will never lose it. If I have contributed in some small way to the preservation and enjoyment of Death Valley National Monument I am well rewarded. Summer heat, wonderful winter weather, vast panoramas, solitude, rugged mountains, everchanging colors, deep blue skies, bright sunshine, fascinating geology, plants, and animals — this is Death Valley. ///



A STRANGE LAND FOR A MAN TO LOVE, BUT GIVEN TIME, LOVE IT HE WILL. SHOWN HERE ARE THE SALT BEDS ON DEATH VALLEY'S FLOOR. ➤

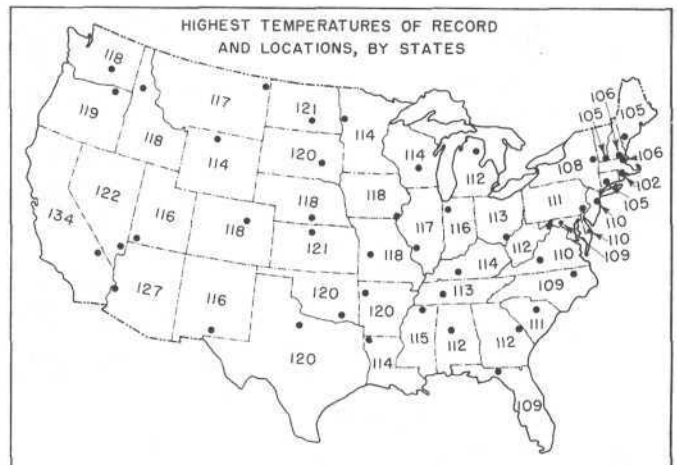
Record Temperatures:

Is Heat the Chief Characteristic of Deserts?

As the large map below reveals, the Desert Southwest has seen some rugged summer temperatures . . . but scan the small map at the right: it can get plenty hot in all corners of the original 48 states. The 121 degrees registered at Steele, North Dakota, tops by five degrees the highest temperatures ever recorded in the desert states of New Mexico and Utah—and is only one degree less than Nevada's high.

Heat alone does not a desert make. Rainfall—or the lack of it—is the single most important factor in determining whether or not a given area is a desert. The desert belt from Death Valley to Yuma receives about four inches of precipitation a year; Tucson gets 10 inches; the Four Corners Area about eight inches; Las Vegas, Nevada, 4.35 inches.

The Southwest is a slightly warmer, but decidedly more arid, land than the non-desert United States.



Visitor Comments:

Barometer to Death Valley's Weather

Visitors who sign the registration book at Death Valley's Park Service headquarters usually have a few choice words of comment to add after their signatures and home towns. You can learn a lot by reading these comments—insight into people, the Valley, and especially weather. *Everybody talks about the weather!*

The registration book reveals that Californians, for instance, plan their Death Valley trips according to the season. In cool February, 95 out of 100 signatures were of Californians. However, in blistering July, only 12 out of 100 travelers were from California.

During last year's summer vacation months, over 70,000 people ventured into Death Valley, many of them at night. Official visitor count showed a steady flow of travelers: 16,670 in June; 15,683 in July; 16,444 in August; and 21,698 in September.

World travelers from Africa, Alaska, Australia, Austria,

Argentina (and so on through the alphabet) return home with differing opinions of Death Valley. Most of those who commented were enthusiastic in any season. A Norwegian wrote, "Fascinating" and translated it into three other languages. A Frenchman recorded, in August, "Reminds me of certain spots in Morocco and Sahara." "Just like home," wrote visitors from Australia and from Iraq. British humor appeared in a November remark: "Long way to come for sunshine." A Cuban queried, "Where are the Indians?" A pair of newlyweds wrote, "Perfect place for a honeymoon."

Travelers vary in their opinions. For example, on March 12th three different California visitors wrote:

"HOT" . . . "Cold" . . . "Just right."

In the columns below are month-to-month comments which point to the way Death Valley weather influences a visitor's viewpoint.—*By Val Evans*

JAN	FEB	MAR	APR	MAY	JUNE
<p>"Enchanting, we will return"</p> <p>"Artist's paradise for color"</p> <p>"Enjoyed every minute here"</p> <p>"A desert paradise"</p>	<p>"Cool"</p> <p>"Delightful weather"</p> <p>"Enjoying our first 'sub ocean' explorations"</p> <p>"Cool, man, cool"</p> <p>"Quiet, peaceful, magnificent"</p>	<p>"We like to froze last night"</p> <p>"A fairyland of flowers"</p> <p>"Surprised us—we liked it"</p> <p>"Glad it's not summer"</p> <p>"Better than Disneyland"</p> <p>"Sandy, rocky, windy, but fun"</p>	<p>"Beautiful but lonely"</p> <p>"Balmy breezes"</p> <p>"Appreciate the clean camps"</p> <p>"Flowers! Miles and miles of flowers in the desert!"</p> <p>"We brought rain!"</p> <p>"Too windy and sandy"</p> <p>"No smog!"</p>	<p>"No people"</p> <p>"One of the most beautiful sights in the world"</p> <p>"'Twould be a long walk out!"</p> <p>"Rangers are doing a swell job"</p> <p>"Hot, barren, desolate"</p> <p>"Loneliness adds to the desert beauty"</p> <p>"A true oasis"</p>	<p>"Pity the '49ers"</p> <p>"HOT"</p> <p>"The name is fitting"</p> <p>"Even the water's HOT"</p> <p>"There's no place like home, and I'm not there"</p> <p>"Whew!"</p> <p>"Needs air conditioning"</p> <p>"Desert(ed) and how!"</p> <p>"We'll never forget Death Valley"</p>
JULY	AUG	SEPT	OCT	NOV	DEC
<p>"It's the heat, not the humidity!"</p> <p>"What a furnace"</p> <p>"Man, it's the END"</p> <p>"Never again"</p> <p>"Intense, withering"</p> <p>"Cold drink! Thanks, rangers"</p> <p>"Hot, Stark, Impressive"</p> <p>"120° in the SHADE, what shade?"</p>	<p>"I'm giving up sin"</p> <p>"Where is everybody?"</p> <p>"Hotter'n @#\$%& but tremendous"</p> <p>"It leaves me breathless"</p> <p>"2000"</p> <p>"There's only one hotter place"</p> <p>"HOT, but wouldn't have missed it"</p>	<p>"For lizzards only"</p> <p>"Why didn't they tell me?"</p> <p>"Interesting scenery"</p> <p>"HOT but nice"</p> <p>"Thanks for the water"</p> <p>"Nice weather"</p> <p>"Terrible heat"</p> <p>"Should be a MUST on any U.S. tour"</p>	<p>"Surpasses all expectations"</p> <p>"Fantastic"</p> <p>"Helpful courteous rangers"</p> <p>"Best sight we saw from New York to California"</p> <p>"Very nice campgrounds"</p> <p>"Paramount"</p>	<p>"Oh, that silence!"</p> <p>"Best time of the year to visit Death Valley"</p> <p>"Life's ambition fulfilled—loved it"</p> <p>"Rain in Death Valley? It did."</p>	<p>"Cold nights, beautiful days"</p> <p>"Spectacular, defies description"</p> <p>"World's greatest monument!"</p>

With Patton On Maneuvers

— continued from page 7 —

direct exposure to the sun, so it is almost universally known as sunstroke. But the fact is that it can occur in shade as well as in sunlight. For heatstroke is simply an indication that the body is unable to rid itself of its mounting heat load and is becoming dangerously hot. A crude analogy, although by no means an exact parallel, is water boiling over in an automobile radiator. But what makes heatstroke such a killer is that the heat-controlling center in the brain—nature's super-thermostat—may get out of order. Sweating then slows down or ceases entirely, internal temperatures shoot up as a result and, if treatment is not given immediately, the victim dies. Luckily most cases are mild, and complete rest in the coolest and shadiest place available usually brings about recovery. In aggravated attacks, it is best to get a doctor pronto—even if he has to be flown in by helicopter.

However, healthy people in good training and fully acclimatized, should have no difficulty avoiding heatstroke. Factors which make one vulnerable in hot weather are poor general health, insufficient food, lack of salt, want of sleep, excess of alcohol or a generally run-down condition. The Army investigated the cases of 198 soldiers who died from heatstroke while training in the United States. Surprisingly, the victims were overcome in temperatures ranging from 79 to 120 degrees. In practically all cases the men who died

were already tired out, not well, not fully acclimatized to heat, or they were overweight. It would seem from this and similar studies that a heavily-built person is a poor risk in hot climates.

The test groups also examined secondary effects, including sunburn and tan. Our findings ran completely counter to popular opinion. Americans make a fetish of sun-bathing, highly esteeming a tanned skin as a sign of health and a standard of beauty. It is also an economic badge of good living. However tests on Army maneuvers showed that tanned bodies are actually more susceptible to overheating than white ones fresh from New York's East Side. The reason is that dark skins absorb a large portion of the sun's radiation, while light skin reflects it. Of course, in time a well-tanned man or woman gains immunity from the dangerous effects of ultra violet rays. But until that point is reached the body is vulnerable, and our conclusion was that probably only hardy individuals should expose much of their skin to the direct rays of the sun—especially while performing violent physical exercise.

From this it would appear that the Arabs have the right idea in wearing loose enveloping white robes of thin material. Such garments protect the body from the sun and cool the skin by constantly swishing the adjacent air into motion. Probably the coolest and most comfortable garments our

girls could wear in desert heat would be long full skirts of thin white material. But if they gave up their present predilection for shorts, the scenery along Palm Springs' Palm Canyon Drive would sharply deteriorate.

After weeks of work the test groups covered most of the problems humans face on the desert in summer. We thought we had some of the answers, too. Of course our findings and suggestions weren't immediately made a part of actual desert battle procedure. But little by little most of them have been adopted in subsequent Army operations. In fact, reports soon reached us that the Big General finally surrendered to the realities of the water situation, and water rations were increased to meet actual needs. Furthermore, we heard that human breakdowns, both on maneuvers and in combat, had been greatly reduced. So we felt that we hadn't worked in vain.

After our stint on the Southern California desert, Sir Hubert Wilkins and I separated and went on to other assignments, while General Patton sailed with his well-trained North African Task Force on October 24. He was completely successful in Morocco and Tunisia. In fact, his brilliant campaigns there, and later in Europe, resulted in his earning a place in history as one of the leading American generals of World War II. But, being a blunt and forthright man, always fearless in expressing his opinions, he dared to criticize the High Command. For this he was relieved from active combat duty and given a desk job. Unfortunately, General Patton's career came to an abrupt end in an automobile accident at Heidelberg, Germany, on December 21, 1945. He was then 60 years of age.

I shall always be grateful to the General. For it was indirectly through him I first learned that desert heat has a benign quality. I never felt better in my life than on the maneuvers. The searing sun seemed to burn the impurities out of my system, leaving a fresh, eager aliveness that I never experienced in humid regions. Learned there, too, was how to meet desert heat halfway, and to adjust rather than fight it.

Today I live all year in southern Arizona. Sniffing the thin, sharp, aromatic air of a summer morning and looking up at the star-studded sky in the black-velvet of night, I thank the Lord for the privilege of having been on General Patton's maneuvers. They made me hopelessly and forever a lover of the desert. ///

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Summer Visit to the Panamints

— continued from page 9 —

dian George led Dr. George (from whom the Indian took his name) up Surprise Canyon, evidently intending to show him the fabulous Panamint silver croppings. But Dr. George turned back, fearing his guide might be leading him into ambush, and Panamint was not struck for another dozen years.

The road paving ends four miles up Wildrose Canyon just after crossing the scars of the old Skidoo pipeline (marked by a small sign) which carried water more than 20 miles along the Panamints from Telescope Peak to Skidoo camp. Route of the boom-time engineering achievement can be traced both north and south.

The steepening graded road enters juniper and pinyon forests, and three miles farther reaches the historic Char-

coal Kilns. The kilns, standing like a rank of vast beehives, made charcoal for furnaces of the Modoc Mine, more than 15 miles westerly across Panamint Valley in the Argus Mountains. The Modoc, struck in 1875, produced about \$2,000,000 in lead and silver and was operated by George Hearst, father of William Randolph Hearst.

Operation of this charcoal camp was described by Oliver Roberts, who worked here in the 1870s, in his book *The Great Understander*. Mexican laborers chopped the pinyon pines and packed them to the kilns. The charcoal was loaded on mules, packed down the mountain, and hauled by wagon across to the mine smelter. The smelter later ceased operation because of cost of obtaining the charcoal.

The last two miles of road to the kilns (6800 ft.) climbs about 1000 feet. Above them the remaining 1.5 miles of road to Mahogany Flat (8133 ft.) is steeper, rougher and narrower, climbing 1250 feet with grades reach-

ing 22%. We had driven all the way to the flats before, but this trip our small '59 auto suspended operations beyond John Thorndike's old camp—now a pleasant public campground. The last half-mile on foot proved quite a chore that April morning, with snow on the ground and an icy wind whipping us successively from many compass points.

Later William Bullard, Chief Park Naturalist, partially consoled us with the information that many cars are tried and found wanting on this last up-pitch. "And visitors should remember," he added, "that this is virtually a one-way road being used both ways." That means the car puffing up has right-of-way over the one crawling down. And since turning around on the narrow road above Thorndike's is a difficult operation, a stop at the campground is indicated if your car is becoming balky.

Mahogany Flats are well worth reaching, with splendid views easterly into Death Valley trough and beyond, and northwesterly the way you came, with the Charcoal Kilns too small for ant hills far below. There are beautiful campsites among the ancient pin-

BANDED PALEOZOIC FORMATIONS ADD BEAUTY TO THE VIEW OF DEATH VALLEY FROM AGUEREBERRY POINT. LOOKING SOUTHEASTERLY INTO THE MASSIVE TROUGH. NOTE ROAD AT RIGHT.



yons and the mountain mahogany (*Cercocarpus ledifolius*) for which the flats are named. The altitude makes it an ideal mid-summer mid-desert campsite. We have slept cold here in sleeping bags in July. You must supply your own water (available at Thorndike's), but frontier-type restrooms are provided.

A jeep trail now climbs beyond Mahogany Flats. It was built in the fall of 1959 when the National Park Service and Inyo Sheriff's Office moved the radio relay station from Aguerberry Point to Rogers Peak, but is closed to public use.

The famous foot-trail to Telescope Peak (11,045 ft.) also starts at the south-end of the flats. Where the jeep trail swings right, the foot-trail swings left. If you plan to climb Telescope, better allow a full day, take food and water, be in pretty good shape and remember the altitude. Distance is only about seven miles, but as one hiker wrote in the Telescope record book: "A very deceptive peak—it looked so easy all the way." Bragging time for the hike registered in the record books, now preserved in Monument historical records, is two hours

(doubtful). Most climbers recorded three to five hours. Some were pleased to make it in six hours or more.

Hikers make the climb the year-round. Winter climbers have had water freeze in their canteens. Parties have been turned back by hail in April, and snow has covered the last 1.5 miles of trail on May 31. Most climbers agree that the view—if not obscured by haze, clouds or dust—is worth the climb. One hiker wrote: "360 degrees of sheer ecstasy!"

Telescope Peak was first climbed—and was named—early in 1861 by W. T. Henderson of Dr. George's party. Henderson gave it the name because he could see so far in every direction without a telescope.

Back at the junction at Wildrose Springs, the main highway twists up Rattlesnake Gulch—which could have been named for its loops or for its inhabitants. Visitors should be conscious of the possibility of the personal appearance of these reptiles anywhere in this country during the summer.

The highway keeps above White Sage Flat and climbs to Emigrant Pass between it and Harrisburg Flats. White Sage Flat is supposed to be the site of the New Year's Day, 1850, camp of the Jayhawker group of the Death Valley '49ers, but there are indications that in early days Harrisburg Flats was known as White Sage or was considered a part of it. Snow fell on the emigrants here, so they named it Snow Camp and laid over a day to melt the snow for sweet water for themselves and their alkali-sated oxen.

Nine miles from Wildrose Springs, on Harrisburg Flats, a graded road branches right to Aguerberry Point. Along this road 1.5 miles, Pete Aguerberry's old camp can be seen, right, against a low rugged hill. This was the scene of the Harrisburg Rush of 1905. Harrisburg should have been—and originally was—called Harrisberry. "Harris" for Shorty Harris, "berry" for Jean Pierre (Pete) Aguerberry.

Shorty and Pete were trail companions but not partners when the strike was made in July 4, 1905. The *Rhyolite Herald* (Sept. 1, 1905) said the two men had not yet flipped coins for credit for the actual find, but that it "is generally given to Shorty, perhaps on the basis of previous achievements." Each claimed the discovery and the evidence would seem to favor Pete. But they were alone and proof can never be forthcoming.

The two had come 20 miles up the Blackwater Trail from Furnace Creek Ranch, heading for Ballarat via Wild-

rose Springs. Here the old trail ran close beside what now, surely, should be called Aguerberry Hill. Pete said he was attracted by a quartz outcrop on the hill. Shorty, eager to reach Ballarat for a bit of Fourth of July, told Pete he had prospected the hill; there was nothing on it. Pete went to take a look anyhow, and Shorty kept pushing his burros along the trail.

The first sample Pete broke off showed gold; the second even more. He yelled to Shorty, but Harris kept on going. Pete took more samples and, he later told George Pipkin, caught up with Shorty in Wood Canyon. Shorty then was all for going back and staking the hill, but they agreed to go on to Wildrose for water. That was about the last thing the two men agreed upon.

Frank Kennedy and several others were camped at Wildrose. Though he had promised to say nothing, Shorty Harris just couldn't keep from dropping hints. The Harrisburg Rush had its beginning there. A new Wildrose District soon was organized, with Kennedy the recorder.

In his life story given to Philip Johnston (*Touring Topics*, Oct., 1930) Shorty declared that he had found Harrisburg by working down from some low grade ledges where Skidoo was struck later. He did not even mention Pete Aguerberry. Other accounts he gave differed, though, as did those of Pete Aguerberry through the years.

Shorty had practically given away his interest in the Bullfrog at Rhyolite, under the influence of what he called "O Be Joyful." This time he was going to be cautious. He sold his share of the Harrisburg claims for cash and more than 40,000 shares of stock. The company promptly voted a two cents per share assessment which Shorty could not pay, and he was frozen out.

Pete held grimly onto his claims, determined to get the price he wanted. In 1914 he relocated part of the hill that had been acquired by the Cashier Mining Company, and he continued to live at his mine and work it until his death in November, 1945. Pete's mine is at the east-end of the hill. The other large workings are out of sight on its south-side. Harrisburg — now only rock outlines, bottles and debris — also is out of sight on the bajada south of the hill. According to the California Division of Mines, the Cashier Mine produced \$150,000 through the years. Shorty got his name on Harrisburg Flats, Pete came out ahead on the mine.

Aguereberry Point (6200 ft.), considered the supreme afternoon view of Death Valley sink, is reached by a



AGUERBERRY CAMP AND HARRISBURG FLATS



five-mile 1000-foot climb from Pete's camp. The road is good, though narrow in the canyon. (A sign at the highway warns it is not passable to trailers.) A short trail leads farther out on the point from the flat where the road ends. A great upthrust of banded metamorphosed Paleozoic rocks in the foreground to east and south adds perspective and photographic beauty. The green square of Furnace Creek Ranch, the chemical playas and huge alluvial fans of the Valley, and beyond them Nevada's desert mountains stretching range after range can be seen from this vantage point.

Aguereberry, realizing the future of this place as a tourist attraction, is said to have worked a route up to it, intending to make it a toll road. Creation of Death Valley National Monument in 1933 prevented that. According to George Pipkin, Pete's last wish was that he be buried on Aguereberry Point, influenced perhaps by the fact that Shorty Harris, at his request, was buried in the floor of Death Valley in 1934. But the Park Service refused permission. In this case Shorty got his wish, Pete received the place name.

Back on the main highway, the Skidoo road also branches right, 2.4 miles north of Aguereberry Point turnoff. Skidoo road is steep in spots and the upgoing traveler has the outside for over a mile, with some mighty spectacular drop-away views of Death Valley. But it is a good road, built by miners and maintained by the Park Service. Only a small graveyard and the usual camp debris remain in the valley, 6.5 miles from the highway, where Skidoo town once stood. A left branch at 6.9 miles leads the visitor

BOB MONTGOMERY'S SKIDOO MINE IN THE PANAMINTS PRODUCED MILLIONS. OLD ADMINISTRATION BUILDING IS AT UPPER LEFT.

over a summit and right up to the old administration building of the Skidoo Mines. The summit offers a breathtaking view of the mine and the mountains dropping away to the erosional wonders of Emigrant Wash.

Most spectacular sight at the mine is the old mill beyond and below the administration building, clinging precariously to the steep side of Mill Can-

yon. The Skidoo Hills were torn to pieces as miners followed the big veins. Biggest workings—the Million Dollar Stope—are out of sight over the hill to the southeast.

The ledges of Skidoo were found in January, 1906, by John L. Ramsey and John A. Thompson. According to the Skidoo Edition of the *Rhyolite Herald* (April, 1907), the two men had been prospecting on Tin Mountain and were camping, practically lost, at Emigrant Springs, hoping some



By BENN KELLER, Manager
Ford Desert Proving Grounds
Kingman, Arizona

On a mid-summer drive through the desert in a non-air conditioned vehicle with passengers that are susceptible to hot weather ailments, make every effort to schedule the trip at night, or at least after sundown.

If your vehicle becomes immobilized for some reason, stay with the vehicle until relief arrives. Do not attempt long walks in the desert country under a hot sun. Do not over-estimate your ability to withstand the rigors of the desert.

When pulling up long grades behind a slow-moving vehicle, manually shift to the next lower transmission gear to speed up your fan and water pump and discourage engine overheating.

Over-inflate your tires (30-35 gauge pressure) if you intend to drive at speeds in excess of 90 mph, for more than short distances, at well-spaced

intervals. This practice will make the ride much rougher but will retard tread-throwing and add to high-speed stability.

If your vehicle stops of its own accord and acts like it ran out of gasoline, although you know there is plenty in the tank, do not be alarmed, it is probably only gasoline vapor lock. Wait at least 15 minutes before you attempt to restart and chances are you will have no further difficulty. Do not run your battery down by attempting to restart the engine before the 15-30 minute cool-down period.

Flash floods, a common occurrence in the Southwest, should be treated with utmost respect. On roads having built-in "dips" for water control, be particularly alert if it is raining or threatening rain. If flood waters of any appreciable depth are running across the road in increasing volume, stay on a high spot in the road and do not attempt to ford the stream until the water has receded. The rushing water often carries debris and stones with it which could permanently damage the underside of an engine or transmission. The velocity and quantity of water many times has been sufficient to carry the vehicle down the wash and completely demolish it.

one would come along and tell them where the next waterhole was. Prospecting out from the springs, Ramsey struck free gold, and 30 claims were staked. C. B. Glasscock says that it was Harry Ramsey and One-Eye Thompson, and that they had been going up to the Harrisburg excitement, became lost in a fog and ended up at Skidoo.

Reason for the name remains a puzzler. The slang expression "23—Skidoo," which meant get out, beat it, was the rage at that time. *Skidoo News* (February, 1907) announced that "Uncle Sam has withdrawn his aesthetic objections" and that the post-

were on the road—and then packed into precarious position by mule or burro. Route of the pipeline, which was sold and torn up in World War I, can be traced all the way from Skidoo to Telescope.

Skidoo's famous event was the shooting, in 1908, of James Arnold, a leading citizen, by Joe (Hootch) Simpson, and the subsequent lynching of the murderer "with general approval" (as the *Skidoo News* put it). The crime was apparently without reason except that the killer was "under the influence." Before Simpson was buried, it was realized that the hanging had not been preserved for posterity,

igrant Springs, during the Harrisburg and Skidoo excitements, was at what is now the upper spring. It was a small tent city with saloon and other metropolitan features, plus an application for a postoffice. Only one residence remains — a large cave with smoke-grimed roof that was occupied during the boom.

Emigrant Springs received its name because it was universally believed the '49ers stopped or passed here. About 1938 Indian George told officials of a small seep in the next canyon over, and investigation disclosed rocks with names or initials carved on them. One was "W B R 1849" — undoubtedly William B. Rood, a most adventurous Death Valley '49er. Emigrant Spring was then relegated to the historical dog house and the Jayhawkers rerouted through the new canyon — named Jayhawker as was the spring.

Below Emigrant Springs the canyon opens onto broad Emigrant Wash and the highway continues to Emigrant Ranger Station (2160 ft.), Stove Pipe Wells Hotel (sea level), and into the summer-hot depths of Death Valley.

Lost mine hunting in the high Panamints can be an added attraction of a summer vacation here. The Jayhawkers in camp on White Sage Flat were joined by a group of '49ers who had packed directly out of Death Valley over the Panamints. In the camp Captain Towne of this group replaced a lost gunsight with one made from native silver which he said he had found in abundance "on top of the ground on a black mesa just below here." When the party moved out of White Sage Flats, Towne and Martin left them and returned two hours later with more silver ore. But no one since is known to have found the Lost Gunsight Mine, though hunting for it did more to stimulate early Death Valley exploration than any other single factor.

Silver mines were found and worked in the early 1870s in the immediate vicinity of Emigrant Springs and on east over the top of the Panamints—the Nellie Grant, North Star, Star of the West, Garibaldi. Some had native silver like that found by Towne and Martin. The best of this ore was so rich that it paid to work it in those times and conditions. Logically one of them could have been the Lost Gunsight—but no real lost mine hunter will admit that possibility.

Lost mine hunters should not, then, count on proceeds of the hunt to pay for the cost of the vacation. But they and others who love the desert will be well repaid by the historic trails and mining camps and scenic wonders of the high Panamints. ///

THE CHARCOAL KILNS IN WILDROSE CANYON



office would be called Skidoo after March 31. At the time Bob Montgomery and his associates bought the property. It consisted of 23 claims, and when the townsite was surveyed and numbered there proved to be 23 blocks. "Being up to date in modern slang, it occurred to them 23 claims, 23 city blocks, equals 23 Skidoo," the newspaper said. Previous to postoffice department acceptance, the camp postoffice had been called Hoveck for Matt Hoveck, manager of the Skidoo Mines for Montgomery.

Glasscock says the name was given because Bob Montgomery promised to build a 23-mile pipeline to bring water from Telescope Peak. Montgomery did build the line later, but the distance wasn't known then. It was a remarkable achievement for any era. The pipe had to be hauled from Johannesburg or Rhyolite—at one time 18 outfits, all with 12 or more mules,

and he was hanged a second time while a photograph was taken.

Montgomery made at least a million dollars in the sale of the Montgomery-Shoshone Mine at Rhyolite, and he made more money at Skidoo after heavy investment. Production figures of three to six million are given, and work on the patented claims has continued intermittently to the present time.

Returning to the highway, Emigrant Canyon, spectacular for its sedimentary deposits and erosion, is entered just below the Skidoo branch, and 3.5 miles from the turnoff, Upper Emigrant Spring is reached. Emigrant Springs is a half-mile farther, and the Park Service has placed a picnic table here and made water available.

Early-day travelers and residents mentioned Emigrant Springs, not two springs. The boom community of Em-

Lost On The Mojave

— continued from page 13 —

in serious trouble. Like the fiery brilliance of an atomic bomb blast, my dulled mind awakened to the full realization that we were in mortal danger.

The next thought I had was trying to decide what I considered the very pinnacle of epicurean delight. I settled on a banana split!

At 4:30 next morning we started back, but we missed all trace of the car. By mid-morning Dub was climbing to every high spot we came to in a vain attempt to spot the vehicle. Once, as I sat resting on the floor of a wash, he called excitedly in a cracked strained voice. He was waving his arms and motioning for me to come. I drew a deep breath and went plodding up the ridge.

I could have cried when I looked upon the object of his excitement—a skinny red cow. I stared at Dub in disgust, but he was very elated. If we could kill the animal we would have something to eat, he explained. Strange that in my lethargy I had not been able to visualize a cow as something to eat.

Dub worried that beast for the greater part of an hour, stalking it until he was close enough to throw a rock at the wary animal. A couple of the stones thumped hollowly and harmlessly against the animal's gaunt sides before it decided to look for other diversion.

We walked the rest of that day—walked and prayed and rested, then prayed and rested and walked. It was like being on a treadmill—each rise brought us to more of the same land we had just crossed.

By five o'clock I was forced to give up. Dub had kept me going the last two hours by his patient urging and teasing, but finally nothing he could say or do could make me stand upon my trembling legs. Talk had become more and more difficult. Sore throat muscles, stiff thickened tongue, and cracked lips made sounds whose meanings had to be guessed at. We were hopelessly lost. That night I fought waves of panic that were urging me to scream and run wildly into the black night. My hunger had abated and I was conscious of my stomach only as a tremendous emptiness. Even my thirst seemed less acute. But now it was my eyes which gave me the most trouble. My eyelids felt as if they were coated with sand.

I remember that the dawn of Thurs-

day morning was the most unusual I had ever seen. The whole eastern sky was a series of sharply defined bands of color, with the stripes highest in the sky a deep blood red. Between each band was a vivid strip of blue sky. As we stumbled along, I remember wondering if this was going to be the last sunrise I would see.

Those morning hours are very hazy in my memory. I am sure we made very little progress. Because of the innumerable washes we were forced to cross, we couldn't have made much distance even had we been on a Sunday joy walk.

At last we topped a steep ridge where we found a cool cave that gave us welcomed relief from the already hot sun. I think we both slept a little, but most of the time we just sat in our cave staring out over the hazy desert

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July, 1960 / Desert Magazine / 29

QUIZ ANSWERS

Questions are on page 19

1. False. 1933.
2. False. 134 degrees in Death Valley, July 10, 1913.
3. False. Badwater — at 282 feet below sea level — is the lowest spot in the Western Hemisphere.
4. False. 100 degrees centigrade equals 212 degrees Fahrenheit — the boiling point of water.
5. True.
6. False. Ground temperature readings of 190 degrees have been taken in Death Valley.
7. True.
8. True.
9. True.
10. True—because vision usually is distorted by heated air layers.
11. False. Creosote bush has been known to survive droughts of several years' duration.
12. False.
13. True.
14. False. Death Valley is a wildlife sanctuary — no hunting is permitted.
15. True.
16. False. The more humid the weather, the less effective the evaporative cooler.
17. False.
18. False. Great thunderheads are common in the desert during the summer months.
19. False. Underground burrows are cooler than aboveground temperatures, and many animals spend the daylight hours in them.
20. False. Manly was a hero in the tragic crossing of Death Valley by the 1849 pioneers.

and saying nothing—grateful for the cool shade.

All too soon the sun found us, and Dub motioned to me that we should be on our way. He reached the top of the ridge a little ahead of me, but I think we both saw it at the same instant: a pool of water—not a city block away and glinting in the sunlight!

We stood stupidly for a few seconds in total disbelief. Then we were stumbling madly down the hill. At the very edge of the pool my legs gave way and I fell into the water with a splash. I tried to cup a drink with my hands, but Dub grabbed me roughly and dragged me out of the water. I struggled with him, fighting wildly to get free. Then my brain registered what he was hoarsely yelling into my ear: "Poison! Poison! Poison!"

There at the water's edge was a crudely lettered sign: "Poison — Do Not Drink."

I promised Dub I would not drink if he would let me crawl into the pool to cool off. He stood at my side as I crept on hands and knees into the shallow water. It was marvelous! The water was very warm, almost hot, and had an odd odor — but still it was wonderful. Dub measured the expression on my face and then stretched full length beside me. I don't know how long we lay in the water. I had the sensation of my parched body literally expanding as it soaked up moisture. Afterward, sitting in the shade of a small tree near the pool, we found it somewhat easier to talk.

Dub was for going on, but I flatly refused to leave the pool of poison water. I could not walk another step, and if I was going to die I would just as soon die in comparative comfort.

He handed me his pocket knife and our last match. He made me promise that I would not leave the pool under any circumstance. If he got out he would know where to send help to me. It was easy to make this promise.

He left about 11 o'clock that morning. I spent the rest of the day in the waterhole. Once I saw two planes flying over, and I wondered idly if they were looking for us. I was too lethargic to try to attract their attention. I thought of poor Dub pushing on through the heat and sand. I prayed for him and then dreamt about a banana split.

When Dub parted from me, he had decided that the best thing to do was pick a distant mountain peak and walk a straight line toward it. In this way he would not wander in circles. About dusk he came to a faint trace of a road.

He turned into it and tramped wearily on in the watery moonlight. The wheel ruts turned into a better-traveled road.

Sometime close to midnight the lights of a car came from behind him. He stood in the middle of the road, staggering with exhaustion. The car slowed down—and then with a roar veered around Dub and sped off in a cloud of dust. The driver thought Dub was a drunk, but later, when common sense caught up with him, the pangs of conscience forced him to report to the military at Camp Irwin that he had seen a "drunk" 20 miles from the highway.

The rescue truck picked up Dub. They started back to Camp Irwin, but somehow he made his rescuers understand that they were going in the wrong direction—that somewhere out in the desert, alone and probably more dead than alive, was a girl.

I was awakened at two o'clock in the morning by a coyote's howl. I sat up in the pool and stared out into the night. I saw a faint glow on the horizon and I remember thinking that this light was too low to be the moon. Then I heard an odd far-away rumbling. It would fade away into the silence of the night, then come back louder. The ghostly light was becoming brighter.

I stood up, my mind clearing of sleep fog. The light reminded me of a searchlight, sweeping back and forth, dying down and then flaring brightly again. The rumbling whining sound was now more distinct. Suddenly my weary mind identified it—a truck laboring against the desert in low gear.

"Oh God," I moaned, "let me get to that truck. Please God, let me reach it!"

I started running wildly toward the oncoming light, stumbling, falling, screeching at the top of my lungs. Unseen bushes caught and tore my already ragged clothes.

The big truck came to a panting halt directly in front of me, its headlights glaring into my eyes. The indistinct figures of men came boiling out of the cab. Strong arms grabbed me as I collapsed.

That first day in the hospital has never been more than a very hazy memory. Of course it was wonderful to have water and food again (even a banana split eventually), but I honestly believe that to be clean again and to be in a soft bed with clean fresh sheets was the greatest blessing.

///

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TACOS WITH RAISINS

- ½ pound lean pork
- 4 tablespoons cooking oil
- 2 onions
- 1 green pepper
- 6 tomatoes
- 1 tablespoon raisins
- 3 tablespoons sherry
- 1 hard-boiled egg
- tortillas
- grated cheese

Grind the pork and fry it in two tablespoons of oil. Chop one onion, the pepper and one tomato and add to the meat. Simmer for a few minutes and then add the raisins, sherry and mashed egg. Cook the second onion with the remaining tomatoes in two tablespoons of oil, to which add enough water to make a good sauce. Simmer sauce for 10 minutes. Moisten each tortilla in the sauce, place a tablespoon of the meat mixture on each, and roll up. Place tortillas in a greased baking dish, cover with the sauce, sprinkle with grated cheese, and bake in 375-degree oven until cheese is melted.

—Mrs. Elizabeth Barbour, Buffalo, New York.

CAMPFIRE LIMAS (serves four)

- 2 slices bacon, diced
- 1 onion, chopped
- 1 can tomato soup
- 1 can dry-cooked lima beans
- 1 can Vienna sausages
- ¼ cup water
- salt and pepper to taste

Use a heavy skillet. Fry bacon, and brown onions. Add beans, tomato soup (use ¼ cup of water to rinse can), salt and pepper. Cook five minutes. Add cut-up sausages. Simmer about 10 minutes longer.

—H. E. Moore, Reno

Desert Magazine pays \$2 for recipes accepted for publication — limited to Spanish, barbecue or campfire dishes. Send recipes and stamped, self-addressed envelope to: "Recipes," Desert Magazine, Palm Desert, Calif.

BOOKS of the SOUTHWEST

BOOK FOR CRYSTAL, MINERAL COLLECTORS

How to be a neat rockhound is the theme of a new little volume *Crystal and Mineral Collecting* recently released by the Lane Publishing Company. The 144-page booklet is for the rock collector who wants a general review of handy size to take along with him in the field.

The advice contained in *Crystal and Mineral Collecting* will be especially valuable for the beginner who is about to graduate to the "expert" class. Not only does the author, William Sanborn, talk the hobbyist's language; he writes so that anyone can follow his description of minerals, his definition of crystals, and his explanations of the characteristics of various gem stones.

Perhaps Dr. Sanborn's most valuable chapter is the one telling how to set up a collection, label, catalog and display it.

The booklet is profusely illustrated. In hard covers, it sells for \$3.50. See instructions at the bottom of this book review section for mailing data.

HISTORY OF ARIZONA'S MINING INDUSTRY

The past and present of the mining business in Arizona is the subject of "Rock to Riches" by Charles H. Dunning, a mining engineer. Many of the strikes Dunning describes are still producing today, others are abandoned.

The book describes the more famous mines of Arizona, using a unique time-table to put each operation into its historic place. Needless to say one book, even a 406-page volume such as "Rock to Riches," cannot do more than touch briefly on all of the hundreds of mines that deserve mention.

Well-illustrated, the book will be a good guide and traveling companion for buffs who ride the roads of Arizona searching out mining history.

Maps, drawings, and old photos illustrate the book, which was put together by the Southwest Publishing Company of Phoenix. The volume can be purchased for \$8.75 (see footnote).

A DESERT GUIDE FOR NEWCOMERS

"An attempt has been made to identify and describe some of the most common plants, mammals, birds, and reptiles of the desert and to answer some of the questions a newcomer to the Southwest is apt to ask." This sentence, taken from the foreword in the new booklet, *Meet the Southwest Deserts*, neatly describes just what this well-done little guide does. Author Phillip Welles has compiled the book from a close personal knowledge of the land and its dwellers. He grew up in Mexico, went to the University of Arizona, has been a guide in Mexico, a biologist with the Arizona Fish and Game Commission, and is presently a member of the National Park staff at Coronado National Memorial in Arizona.

There are 110 illustrations in the book, showing the more common shrubs, cacti, birds, animals, reptiles, insects, and amphibians of the lower desert regions.

The paper-bound edition of the 82-page booklet sells for \$1, and the hard-back copy sells for \$2.25. See details at the end of this book review column for ordering *Meet the Southwest Deserts*.

Books reviewed on this page can be purchased by mail from Desert Magazine Book Store, Palm Desert, California. Please add 15c for postage and handling per book. California residents also add 4% sales tax. Write for free book catalog.

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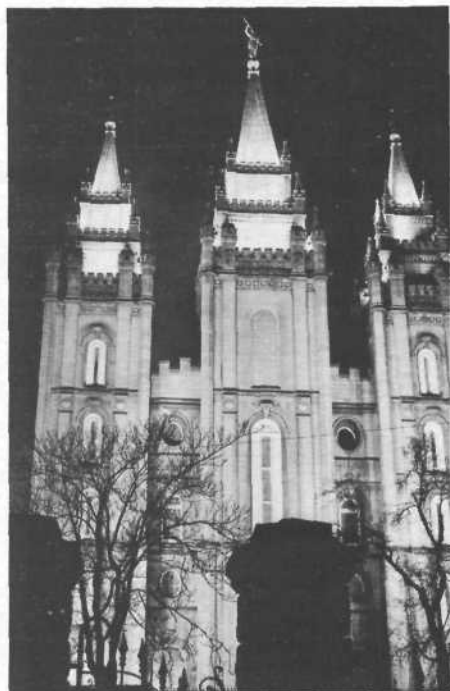


Frank Jensen
Box 808, Cedar City, Utah

EVERY JULY 24 ornately decorated floats, horsemen in their gaudy shirts, their horses decorated with silver bridles and saddles, and lumbering prairie schooners, pulled by floppy-eared mules, pass in review down Salt Lake City's busy thoroughfares.

The pageant is all part of the Pioneer Days Celebration (July 23-25) commemorating the entrance of Mormon Pioneers into the Salt Lake Valley more than a century ago.

Salt Lake is a city of charm and unique interest. The Utah visitor is usually impressed with the city's broad streets (132-



NIGHT SCENE, MORMON TEMPLE

feet wide), and its unique background—the towering Wasatch Mountains to the southwest.

Among Salt Lake's historic and scenic attractions are Temple Square, the Lion House, Brigham Young's Grave, the This is the Place Monument State Park, and Great Salt Lake.

Temple Square, which annually attracts thousands of visitors to Utah's Capital City, covers 10-square-acres in downtown Salt Lake. Here are the buildings sacred to the Church of Jesus Christ of Latter Day Saints (better known as the Mormons), notably the Temple and famed Mormon Tabernacle, with its great organ.

The Tabernacle is one of the most unusual examples of pioneer architecture in the West—a great dome-shaped building capa-

ble of seating 8000 people. Its joints and beams are lashed together with rawhide, and within the massive dome there are no pillars. The Tabernacle has nearly perfect acoustics, a perfect setting for the Tabernacle Organ which has nearly 11,000 pipes ranging from five-eighths-of-an-inch to 32-feet in length.

The Temple is adjacent to the Tabernacle, towering above the Tabernacle and dominating all of Temple Square. Constructed of native granite, the Temple required 40 years to build. Unlike the other buildings on Temple Square, it is restricted to members of the Mormon faith.

The Lion House, one-half block east on South Temple Street, was a former residence, school and social center for Brigham Young's numerous families. Nearby is the Eagle Gate, arching over what was once the entrance to the Mormon leader's estate.

The grave of Brigham Young is located in a private burial plot a half-block from the Eagle Gate on First Avenue. Here Young, five of his 19 wives, and three of his 56 children are buried.

Although the monuments to Utah's pioneer heritage are almost legion, one of the most outstanding edifices is the This is the Place Monument at the entrance to Emigration Canyon overlooking the city.

This impressive monument, with its plaques and bronze statuary, was dedicated July 24, 1947, during Salt Lake City's Centennial year. Brigham Young caught his first glimpse of the Salt Lake Valley from here, and prophetically he stated: "This is the Place."

Among Salt Lake City's other attractions are its State Capitol Building which houses exhibits of Utah's mineral and agricultural resources and scenic wonders. Salt Lake City is also the home of a state university, the Pioneer Memorial Museum, and the Brigham Young Monument.

Eighty-acre Liberty Park is located in the heart of the city's sprawling residential section. The park, with its inviting lawns and cool trees, has a grist mill owned by Brigham Young, and an aviary which houses a variety of birds.

Fifteen miles west of Salt Lake City the Great Salt Lake sends its waves rolling onto sandy beaches. This lake is the dying remnant of prehistoric Lake Bonneville, an inland sea that was once 350 miles long, 145 miles wide, and more than a thousand feet deep. The lake is so heavily saturated with salt (25 percent) that bathers bob like corks on its surface.

Salt Lake City is a major airline, bus, and train terminal. It has some of the finest accommodations between the West Coast and Denver. Motel and hotel rates vary from less than \$4 to \$17 a day. There is also golfing, swimming, camping, fishing and picnicking in the nearby mountains.

These Utah communities plan Fourth of July celebrations: Salina, Provo, Clearfield, St. George, Beaver, Hyrum, Cedar City, Bountiful, Centerville, Parowan, Tooele and Grantsville. The Nephi-Ute Stampede is scheduled for July 14-16. On July 15-16 the 49th annual hike to the top of 12,000-foot Mt. Timpanogos takes place (Aspen Grove is the starting point). Auto racing will be held on the Bonneville Salt Flats during the last-half of the month. ///

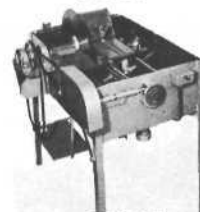
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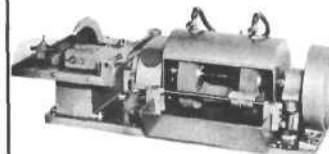


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By Thomas B. Lesure
6120 N. 18th St., Phoenix

A STRICTLY mild-weather motor trip, Arizona's Coronado Trail from Clifton north to Springerville ranks among the most dramatic drives in the West. What's more, it's filled with plenty of in-



HANNAGAN MEADOWS LODGE

vigorating recreation ranging from camping to trout fishing.

Designated U.S. 666, the Trail commem-

orates the 1540 expedition of Francisco Vasquez de Coronado on his search for the legendary Seven Cities of Cibola. His route traversed much the same country and is believed to have crossed the modern Trail at a point near Hannagan Meadows.

The current Trail, compared to the rugged path of a few years ago, is a virtual boulevard, even as it snakes along the side of precipitous Mogollon Rim. Nonetheless, it's still closed by heavy snows from about mid-November to mid-May. Having made the drive both ways, I recommend heading north from Clifton rather than making it south from Springerville. This means backward views—and they're exceedingly sweeping—from the Mogollon Rim, but the scenic climax at Springerville is more appealing than the harsher deserts around Clifton.

Clifton, built among narrow gulches that crowd the tight street, was an old copper smelting town. Now the operations (including the huge Phelps Dodge open pit copper mine) are at Morenci atop a nearby hill. Make a brief stop to look at the "Coronado," one of the state's first narrow gauge locomotives, and the odd Cliff Jail—a two-cell bastille hacked out of rock at the foot of a roadside hill.

Northward, the Trail runs through the remains of the former gold camp of Metcalf; only a few foundations are left now whereas a few years ago one could still find relics along turquoise-tinted Chase Creek. Past here the road snakes rapidly upward and soon undulates through the Granville Recreation Area in Gila National Forest. Then past old cattle country, and even higher (distant mountains ripple away like bluish meringue on the horizon), the Trail passes 8787-foot-high Rose Peak from whose summit a fire lookout tower affords tremendous vistas.

The most panoramic landscapes come as the route curlicues up the steep Mogollon Rim, more than a 1000 feet higher, to Hannagan Meadows in Apache National Forest. A rustic sportsmen's lodge and public campground both provide pleasant bases for back-country exploration—particularly to some of the many trout streams.



About halfway between here and Alpine, Beaverhead Lodge—at road's edge—is a take-off place for big game hunters in the fall, pack trips into the rugged Mt. Baldy Wilderness Area where the Little Colorado River is born, fishing at Big Lake and other waters, and for inspecting Indian cliff ruins in the area around Blue.

Pavement, which ended near Rose Peak, begins again at Alpine, another small sportsmen's center among wood-surrounded meadowlands. Before reaching here, you'll probably have spotted some of the deer, wild turkey and other wildlife that abound in the region.

It's a pleasant drive through alternating forests and meadows for the last 30 miles before the Trail ends at Springerville, set among rolling grasslands and winsome mountains—the storybook version of the West. From here, White Mountain recreation and the Fort Apache Indian Reservation are "just a step away."

The Coronado Trail, where the ghosts of Spanish *conquistadores* seem to hover and the wonders of nature remain pristine, can be "done" in a day. Many people meet it that way. But the knowing traveler, the one who wants to *experience* it rather than merely see it, will linger—to savor its fare in the leisurely, rewarding manner it deserves.

If your travels take you through Flagstaff, stop by the Museum of Northern Arizona to see the Hopi Craftsman Show (July 1-14) or the Navajo Craftsman Show (July 24-31). III

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By Peggy Trego
Unionville, Via Imlay, Nevada

THIS MONTH Nevada's Fort Churchill will be a century old — and that, as things go in the Great Basin, is very old indeed.

On July 20, 1860, the Fort was dedicated to its job of protecting the citizens of the (then) western Utah Territory from Indian uprisings. Its active life spanned a mere 10 years, but the desolate, splendid relic holds a vital decade of Western history in its ruins.

Fort Churchill is 25 miles southwest of Reno, and an easy day's trip to and from



Reno, though the round-trip mileage varies from 46 to 61 miles depending on the route you choose. The easy (and longer) way is via U.S. 95 which runs within a mile of the Fort—from Reno travel east on U.S. 40 to Fernley, thence south on U.S. 95. Far better, to my way of thinking, is to go by way of Virginia City, down Six-Mile Canyon (Nevada's Route 79) and along the Carson River (Nevada's Route 2-B). This was a part of a great East-West Trail in the early days. It is also a beautiful road, the better for being unpaved from Virginia City east.

Imagination takes over on this "unimproved" road. It is easy to visualize Fort Churchill's spruce soldiery riding out to bring protection to Indian-threatened towns and trading posts, or to arrest Confederate sympathizers. (These captured Rebels were made to walk the Fort's parade ground for long hours with sacks of sand on their backs, a punishment guaranteed to make good Union men of them—at least outwardly.)

As you drive toward the Fort along Route 2-B from the west, its dun-gray outline looms up suddenly, and for the first moment it seems more intact than it actually is. Although the adobe brick buildings are only shells, they are still impressive, and if you have been wise enough to visit the Nevada Historical Society Museum's Fort

Churchill collection of maps and pictures in downtown Reno, you can easily re-create the installation that was once here.

Fort Churchill grounds covered 1400 acres. It was named for Capt. Charles C. Churchill of the Third Artillery. Capt. Joseph Stewart (later Alaska's first military governor) laid out the fort and established it as a military post; his original command was one complete company and two detachments of Artillery, two companies of Infantry and two troops of Dragoons. The six buildings of the officers' quarters cost \$16,000 each (they are the two-story shells north of the parade ground). In addition were barracks for 300 enlisted men, an arsenal, powder magazine, blacksmith shops, barns, corrals and stables.

Among its more dramatic roles in Western history, Churchill was the eastern terminus of F. A. Bee's telegraph line, originating in Sacramento—and thus the Fort became the Westerly terminus of the Pony Express. It was to Fort Churchill at 1 a.m. November 14, 1860, that "Pony Bob" Haslam galloped with the news of Lincoln's election and at the same time made his heroic Pony record of 120 Indian-infested miles in 8 hours, 10 minutes.

Churchill's militia marched when it was summoned—and it marched for rough business those early years, taking care of Indian troubles from the Sierra east to Austin. Many of its soldiers were buried in the Fort's graveyard, and here, too, on August 19, 1865, grim cavalymen brought the body of their commander, Col. Charles McDermit, killed far to the north in an Indian ambush. The Fort itself was the focal point of a Paiute-Bannock plot in 1861, which was caught in time to prevent infiltration and attack from within its walls.

When the Civil War broke out, California and Nevada volunteers replaced Army regulars here. A small detachment of regulars relieved the volunteers in the spring of 1866. Three years later the completion of the transcontinental railroad left the Fort's usefulness a thing of the past. Ninety years ago last March, the Fort's appurtenances brought a mere \$750 at auction. Even the soldiers' graves were moved to San Francisco's Presidio.

However brief, Churchill's history was an integral part of Nevada, and this was recognized when it became Nevada's first state park. Thus, in a century, turbulence has turned to serenity.

The re-run of the Pony Express holds the spotlight during the latter part of July in those northern Nevada communities once served by horse-mail. ///

One California desert event of special interest: July 2—the Fourth Annual Antelope Valley Rodeo and Antlers Roundup at Palmdale.



RUINS OF FT. CHURCHILL OFFICERS' QUARTERS



By W. Thetford LeViness
P.O. Box 155, Santa Fe

EVENTS ARE scheduled all over New Mexico in July, and anyone spending the whole month there would have difficulty choosing what to see and do.

First of all, there is the Mescalero Apache encampment, July 1-4 this year, at the agency town on the only Indian reservation in the southern part of the state. Mescalero is on U.S. 70 between Roswell and Alamogordo. The program includes two impres-



sive after-dark rituals all four nights—the maidens' dance in a ceremonial tepee, and the so-called "devil dance" around a huge bonfire. There are baseball games in the mornings, and rodeo and dancing by visiting tribesmen in the afternoon.

There is a corn dance at Cochiti July 14, and one at Santa Ana July 26. These pueblos are a mile or so off State Routes 22 and 44 respectively, north of Albuquerque. Rodeo de Santa Fe is scheduled July 13-16 this season, and there are fiestas with a Spanish flavor July 25-26 at Taos (U.S. 64 and State Route 3) and Tierra Amarilla (U.S. 84).

The fourth annual Puye Ceremonials take place July 23-24. Begun in 1957, they are promoted entirely by Indians of Santa Clara Pueblo, who charge a fee for upkeep of the village.

Puye (pronounced: poo-YAY) is the ancestral home of this Tewa-language group; it is about 15 miles from Santa Clara, off to the west in the Jemez Mountains. The Indians still own the site, as well as some camping and picnic grounds near by.

A series of cliff-dwellings runs along an escarpment at Puye, with some structures atop the cliff. Much is in ruins, but there has been some excavation and a few houses and kivas are restored. Built between 1450 and 1475, its heyday of civilization came in the 1540s, about the time of the first Spanish explorers. By the time Onate founded the first European colony in the region in 1598, Puye had been abandoned.

Visitors may climb through the cliff-dwellings and roam in the surface ruins above. A restored kiva is accessible by ladder from a hole in the roof. During the ceremonials, guide service is on hand. Parking is available in a clearing below the cliff houses or in a lot adjacent to the ruins above.

Many visitors prefer to leave their cars on the lower level and climb the pre-Columbian trail.

The trek up, part way by ladder as in ancient times, passes the cliff-dwellings. Some of the houses were constructed within the cliff, while others were built against it. The structures ranged in size from one-room storage bins to three-story dwellings, roofed over by the cave itself. These masonry structures were the work of a stone-age people who didn't know the wheel and who hadn't invented effective tools as they are thought of today.

The surface ruins reflect the "golden age" of pueblo construction. Four multi-storied terraced buildings faced each other around an oblong plaza. Rooms within each were connected by a network of tiny doorways, their sills about a foot and a half above the floor. There were vents in the sills, and archeologists have found the stone plugs the Indians used when it was cold, and fresh air wasn't needed.

Access to the plaza was by two entrances at diagonally opposite corners. Puye was an impregnable fortress—a bulwark for all who lived there against marauding tribes of the times.

Dances to be given July 23-24 are much the same as those held at regular intervals throughout the year at Santa Clara and other pueblos where Tewa is spoken. They include hunting and rainbow dances. This



THE RUINS OF PUYE IN NEW MEXICO. BUILDINGS WITH LADDERS ARE RECONSTRUCTIONS.

year for the first time, a Comanche dance will take place, and Hopis from Arizona are sending an Eagle dance team for the occasion. Some of the costumes to be used have been the property of Santa Clara families in direct line from prehistoric times; more recent ones are patterned after the old. Indian personifications of "buffalo" and "deer" will scamper through Puye in festive garb, just as their ancestors did in the pre-dawn of New Mexico history.

To reach Puye, drive north of Santa Fe toward Los Alamos (U.S. 64-84-285 for 16 miles, then State Route 4 for 6 more); take State Route 30 at Otowi Junction; five miles from there, take a dirt road 9 miles to the ruins. ///

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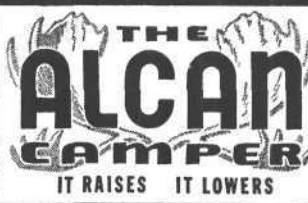
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FOR INFORMATION on desert acreage and parcels for sale in or near Twentynine Palms, please write Silas S. Stanley, Realtor, 73644 Twentynine Palms Highway, Twentynine Palms, California.

WEEK-END CABIN on five acres, near 29 Palms. NE 1/4 of sec. 27, township 2N, range 8 — \$2500.00. One of 3 purchase plans to suit. Box 997, Palm Desert, California.

\$2500 CASH: four rooms and bath, partly furnished, new curtains and linoleum, entirely renovated inside and outside, garage and screened front porch. Mina Belcher, Box 188, Randsburg, California. Phone 5292.

RARE OPPORTUNITY for a wilderness retreat, Nevada's famed mining districts. Your own patented mining claims \$150 up. Excellent terms. Full surface and mineral rights. Great Basin Prospects, 2740 11th, Sparks, Nevada.

● PLANTS, SEEDS

WILDFLOWERS SEEDS: New catalog offers over 600 different kinds of wildflower and wild tree seeds. Catalog 50c. Clyde Robin, Carmel Valley, California.

CACTUS AND Succulents: Eight of these exotic plants from the deserts of the world. \$2 postpaid. G. Robert Meyers, Box 521, Vista, Cal.

ROSSO'S CACTUS Nursery, 25399 Highway 99, Loma Linda, California, between Colton and Redlands. See the largest variety in the world.

OLD FASHIONED large gourd seeds, mixed types, certified, 50c. Ornamental; useful for birdhouses, centerpieces, Christmas decorations, conversation pieces, etc. Certi-Seeds, 5915 Shoshone Avenue, Encino, California.

GROW GIANT Saguaro Cactus in your home in 7 days, planter soil, seeds, \$1.25, guaranteed, prepaid. 1914 East 18th Street, Tucson, Ariz.

CHIA AS featured in article, "Hot Cakes and Chia" for sale—limited quantity, \$7.50 lb. Inquiries to Bruce Gregory, Box 147, French Camp, California.

● WESTERN MERCHANDISE

OLD GUNS, branding irons, hub lamps, wagon-wheel ceiling lights, railroad lantern lamps, wheels, seats, Southwest books, magazines, relics, cow skulls, stirrups. Frank Graham, 5615 Guadalupe Trail, N.W., Albuquerque, New Mexico.

GHOST TOWN items: Sun-colored glass, amethyst to royal purple; ghost railroads materials, tickets; limited odd items from camps of the '60s. Write your interest—Box 64-D, Smith, Nevada.

CARTRIDGE BELTS and holsters: Western style with one holster—\$15, two holsters—\$18. Holster \$4. We handle steer fox hunting horns, powder horns, etc. For general circulars send stamps. General Mercantile Co., Laredo, Texas.

● MISCELLANEOUS

BOOKKEEPING SIMPLIFIED: Conforms to all federal and state tax law requirements. Complete book only \$4.95. Mott Distributors, P.O. Box 602, Lovelock, Nevada.

SIMULATED ENGRAVED business cards \$3.95 and \$4.95 per thousand. Write for samples. Tumble polished baroque \$2.50 per pound postpaid. Doney's Printing & Rock Shop, Box 246, Lucerne, Lake County, California.

FANTASTIC INTRODUCTORY sale: Finest precision quality 8x30 center focus prism binoculars with hard coated lenses, fine leather case and shoulder straps. Special offer, below usual dealer's cost. Regularly \$43.50. Limited time, only \$24.95—30 day money back guarantee. We pay the 10% F.E.T. and shipping. Rush check or money order today. Lorbro Products Company, 406D Walnut Street, Alexandria, Ind.

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ULTRAVIOLET LAMPS from \$14.50. Accessories, tubes, filters, electrical parts, batteries available. Free literature. Radiant Ultra Violet Products, Manufacturers, Cambria Heights 11, New York.

BIRD COLLECTION mounted in 49 dioramas, comprising 86 birds, covering 54 species from hummers to whistling swan. Fine for museum display, public or private. Full information on request. Hugh Worcester, 1229B University Ave., Berkeley 2, California.

EARTHWORMS, LUSH gardens, fine lawns, good bait. Send \$1 for instructions and 200 P.A.X garden and bait worms. Patton Worm Farms, Highland, California.

OVER 100 new unusual gifts, gadgets and housewares. Send 10c for unique catalog. T. W. Friedhof, 4015 South Western Avenue, Los Angeles 62, Calif.

DESERT RAT HARRY OLIVER'S

ALMANAC

1888 · 1999

The Land of Hot and Thin Shade

I write this in June. Most of June is just a work-out for July, and July we have with us for about five months here in the desert. Old Man Leadtoe, who hasn't been out of the Imperial Valley in his life, says he's lived there 70 winters and 700 summers.

As I sit writing these scorching facts about July, the editor of this magazine keeps blowing a match flame into my ear. "Mood music," he calls it.

¶ Dry Camp Blackie has been prospecting around this desert for years—summer and winter. One day in July a drop of rainwater hit him on the forehead. I had to throw two buckets of sand in his face to bring him to.

CRAZY WEATHER



Liminatin' Lem came to the old Fort today with an empty match-box in his hand. He wanted three spiders from my place. Lem explained that he had shot three holes in his screen-door trying to bring down a chicken-hawk. Now he needed some spiders to spin webs over the holes in the screen to keep the flies out. He got the spiders all right, but I forgot to ask if he got the hawk, and he won't be in again for weeks. He has gone up to the mountains to cool off his brain a spell. I can always tell just how hot that brain is getting from Lem's projects.

¶ The two families living up at the oasis have called a truce to their feud until the weather cools off. But, the one family's dog and the other's cat are still at it. I saw the dog chasing the cat yesterday—and it was so hot both of them were walking.

¶ These new air-cooled rear-end engine cars are a menace on the desert. No radiator water to drink in case of an emergency.

JULY AUG-SEPT.



First Quarter
1/31



Full Moon
8



Last Quarter
15



New Moon
23

¶ Most of my neighbors turn the face of their thermometers to the wall when July gets started. They're afraid the truth will kill 'em.

¶ Last July it rained nine days in a row, but nary a drop hit the ground. It turned to steam—like spittin' into a blast furnace.

¶ The water is so hot as it is drawn from the faucet that it must be sauced and blown before it can be drunk.

¶ The lizards are hanging by their tails on the shady side of the cacti to keep their bellies from frying.

¶ My cat sinks the claws on each of her feet into a prune before she walks across the sunny patio.

¶ From where I sit in Old Fort Oliver I can see farther and see less than anywhere else on earth. After dinner yesterday I picked up my old telescope (I keep it in the ice box along with my gold toothpick so's they'll be cool enough to handle) and scanned Broiling Flats where I saw a Jumping Cactus crawl off into the shade of a big rock.

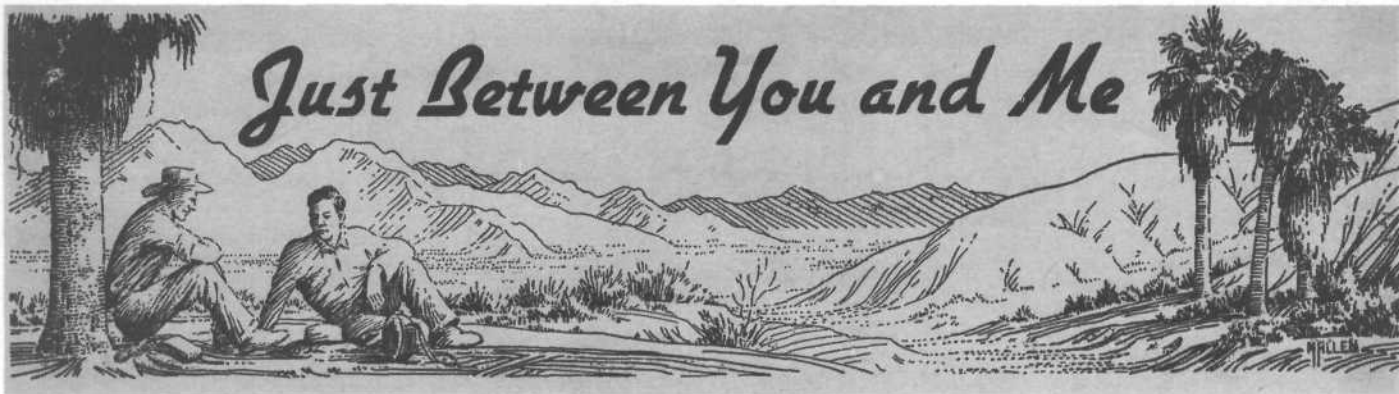
¶ My dog, Whiskers, has such a hot nose he burned a hole in the back door.



¶ Did you know Yuma lizards travel in pairs when they cross the Algodones Dunes in summer? One rides on the other piggy-back until his feet are cooled-off. Then they trade off.

The trouble with July is that it just doesn't know when to stop.

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By RANDALL HENDERSON

SUMMER DAYS are here again, and to those who are year-around dwellers on the desert this is a time for adjustments in the daily routine of living. Desert sunshine is wonderful—for the tourists who flock here during the winter months. But when the thermometer passes the 100-degree mark day after day we denizens of this arid land are more interested in shade. Summer sunshine here is merely a necessary evil.

But humans can adjust to it—just as the plants and wildlife of this blazing region have learned to do. Actually, I believe that desert homes equipped with the insulation and cooling equipment now available wherever there are sources of power, are the most comfortable homes in the nation at this time of year. My personal preference is for evaporative cooling rather than refrigeration. Probably I am in the minority, but I like the constant change of air that comes from the evaporative blower. But if you install evaporative coolers be sure to specify double the CFM capacity required by the engineering manual.

I will repeat what I have said on this page many times before—the best formula for summer living on the desert is to keep busy, drink lots of water, and breathe deeply.

* * *

In 1932 when Death Valley was being considered for National Monument status, President Hoover insisted there should be no interference with prospecting and mining in the area. Hoover's wishes were incorporated in an Act of Congress in 1933. And so, contrary to the rules governing most of the other national monuments, the miners may stake out claims at will in this recreational area.

But the concept of a precious metal hunter in those days was of a prospector and his burro. Such prospectors came and went with little attrition to the landscape over which they roamed. For nearly a century they have been picking and panning the Death Valley terrain, and their operations have left few scars.

But the burro-pro prospector is almost an extinct species. He has been replaced by big operators with big machines—machines that slash and gouge the landscape and leave behind a trail of ugly destruction that is almost irreparable.

And that is what is happening in portions of the Death Valley Monument today. Recently I saw pictures taken in the south end of the Monument of bulldozers at work excavating and dumping—leaving a landscape without charm and unfit as a habitat even for the wildlife. The threat is that under present legislation this could happen at Badwater, Artist's Drive, Zabriskie View, Ubehebe Crater or any one of more than a thousand scenic and archeological sites within the Monument.

The Death Valley '49er directors have taken the initiative in asking the Department of Interior to establish regulations which will give some degree of protection against indiscriminate defacement of the landscape within the Monument by mine operators. Such regulations would give the landscape some degree of protection, but they would not be the ultimate answer. There is a growing sentiment in favor of asking that Death Valley be given National Park status. This would eliminate all mining except on patented claims, and this appears to be the logical solution to the problem.

Much of the Death Valley area has low-grade mineralization. As ores in richer fields elsewhere are depleted it is inevitable that industry will turn to the low grades as their source of mineral ores. In a measure, that is what is happening today. If the public would preserve this region for the unique scenic, scientific and recreational values of the natural landscape, it is important that before very long it be given legislative protection.

* * *

In one of the chamber of commerce brochures gotten out by a Southern California community I read: "The cultural life of a community holds a place of scarcely less importance than that of the commercial."

Unfortunately, that is a viewpoint held by well-meaning men in nearly every community—dollars first, the art of living second. Basically, that is the philosophy of Karl Marx—that if man's economic interests are well served, then cultural man will emerge as a matter of course. That is the materialistic basis of socialism, and there is increasing evidence that it is more and more becoming the creed of capitalism.

I know one small community which recently raised a storm of protest against the levying of a small tax for the construction of a new library—and then endorsed the raising of a \$20,000 fund for advertising ballyhoo to publicize the town's commercial opportunities.

For my part I cling to the faith that if the chamber of commerce would devote its energies and resources to the cultural aspects of community development, the cash register would take care of itself. I have confidence that eventually a more enlightened generation of businessmen will understand this.

* * *

From my scrapbook: "Climb mountains and get their good tidings. Nature's peace will flow into you as sunshine flows into trees. The winds will blow their own freshness into you, and the storms their energy, while cares will drop away from you like the leaves of autumn."

LETTERS

... FROM OUR READERS ...

The Fate of Olive Oatman ...

To the Editor: In regard to the first question in the May Desert Quiz: Olive Oatman did not die "soon after her release (from her Indian captors), having gone completely insane."

Olive was captured in 1850, 80 miles north of the mouth of the Gila River. In March, 1856, she was released. From Ft. Yuma she went to Los Angeles and then, in company with her brother, Lorenzo, and a cousin, H. B. Oatman, went to the Rogue River Valley in Oregon.

Later she returned to California and spent about six months in the Santa Clara Valley. In March, 1858, she sailed from San Francisco to New York with the Rev. Royal B. Stratton and his family. He was

the author of *Captivity of the Oatman Girls*, published in 1857.

In November, 1865, Olive married John B. Fairchild in Rochester, New York. She died in Sherman, Texas, March 20, 1903.

HOWARD D. GREEN
Los Angeles

Dogs on the Desert ...

To the Editor: When I move to the desert I intend to acquire a dog. Can you or your readers advise me on which breeds seem best suited for the heat, cold and wind?

NORMAN A. RIGGLE
Pasadena, California

(I have seen all kinds of happy dogs on the desert—long, short, hairy and hairless. Generally speaking, I would think a short-haired dog would fare better in the summer.—Ed.)

A Lost Mine Fan ...

To the Editor: Desert used to be my No. 1 magazine. I'm interested in lost mines and buried treasures—that's why I took the magazine. I don't care for pretty rocks, flowers, snakes, lizards, etc.

Why throw away money on that hard glossy paper and highly colored pictures of trees, flowers and weeds, when plain soft paper with one color print was so much better and easier to read.

F. L. KISTNER
Wilsall, Montana

The Green Light ...

To the Editor: For the last several years I have enjoyed your magazine to the fullest extent, and no matter what changes in format you plan, go ahead and make them. I for one am with you. I shall consider myself fortunate to receive your magazine in any form you may choose to deliver it.

As an old-timer I appreciate your factual and well-written stories. I am pleased that the Desert Quiz has been restored. I

have averaged 16 correct answers in these quizzes during the life of my subscription.

HENRY M. FORD
Yucaipa, Calif.

Want to Live in a Ghost Town? ...

To the Editor: I have a large well-preserved brick and stone house in the ghost town of White Oaks, New Mexico. I want to make it available rent-free through the summer and fall to a family or writer or artist or prospector who will protect it from vandals and tourists.

This caretaker could make some income by selling light refreshments, because there are no business places of any kind left in the town. Only eight families live in White Oaks today.

Anyone interested?

DONALD MacKAY
1213 Ohio
Alamogordo, New Mexico

POEM OF THE MONTH

Desert Circus

By
MAUDE RUBIN
Santa Ana, Calif.

The parade of flowers is over.
A tiger-act
Of heat stalks each arroyo,
trailing down
The lizard's drowsing dream.
Each rat has packed
His treasures to his cave;
each chipmunk town
Is level and deserted;
tumbleweeds
Are rotund clowns that doze
in the welcome shade
Of elephant buttes ... And
yet when twilight leads
The stars out, air is cool
as lemonade;
And wheeling overhead,
through calm or storm,
The aerialist eagles
still perform.

Desert Magazine pays \$5 each month for the poem chosen by the judges to appear in the magazine. To enter this contest simply mail your type-written poem (must be on a desert subject) to Poetry Contest, Desert Magazine, Palm Desert, Calif. Please include a stamped return envelope.

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CHARLES E. SHELTON
publisher
EUGENE L. CONROTTO
editor
EVONNE RIDDELL
circulation manager

Publisher's Notes . . .

We have had so many requests for reprints of the Gold Rush series now appearing on the front and back *Desert Magazine* covers that we have arranged to have large top-quality reproductions made — without any type or printing on the pictures. The prints, a set of four, will be on expensive stock with white margins, suitable for framing. These sets will be slightly larger than the magazine format. They will be available immediately on a first-come first-served basis.

Further information on the lithographed reproductions of the famous Clyde Forsythe paintings is listed on the opposite page.

* * *

For the first time *Desert Magazine* is devoting an entire issue to heat and the hottest country in the United States—Death Valley. We might as well admit that the desert means aridity and heat, so here it is, a full round-up on the most talked-about feature of the desert-land: heat.

* * *

It has taken months of correspondence and the assistance of dozens of persons to tie-up the heat topic. For centuries the hot dry valleys and seared slopes of the barren hills have held a dreadful fascination for men who dared the Western wastelands.

Slowly the desert is being tamed. There are those who will regret this, but it is a fact that cannot be denied nor delayed. Air conditioning, better roads, better automobiles and trucks, wider distribution of water, numerous new stores and gasoline stations dotting the once-vacant desert—all these factors are reducing the Southwest's twin terrors of heat and aridity. So, it is none too soon to dedicate an issue to heat in the desert.

Ten or twenty years from now science will reduce the once-dangerous desert to a mild-mannered land of hospitable homesites the likes of which old-timers could not imagine. So, just this once, let's look at the desert in all her heated fury.

CHUCK SHELTON
Publisher

THE MINING CAMP

— continued from page 2 —

did know Tom Owen well, and he was one fine man."

Pointing to Cotta, I said, "You'll be surprised to know that my wife is Tom Owen's daughter." And Joe O'Brien wrapped his gnarled arms around Cotta and kissed her on the cheek, his eyes brimming.

We had found two more friends in camp, and Joe took us under his wing. Our car had been the only fairly expensive vehicle in Wahmonie, but now there came another. Governor Scrughum had arrived to look the strike over.

Joe took me up to the "town hall tent" to meet the Governor, later Senator, and a most affable man. He, too, had visions of another Goldfield or Tonopah here.

When the Governor left, I got out a sketch book and spent a few hours painting studies of the camp and surrounding hills. This was opportunity.

Back to the cafe for an early supper, and here in front, on the ground, was a crap game in progress. A new character stood watching — a stout man with a star cut from a tomato-can fixed to his shirt.

"Meet George Saunders, camp constable," said our Mr. Davis. "He keeps order around here." And so, as Saunders was the law, I had to make friends.

No—no trouble so far. Camp too young. Oh, he was from Goldfield. Miner? No, he had been a bouncer in Tex Rickard's saloon and gambling palace at Goldfield. Well, I knew Rickard in New York where he promoted fights in Madison Square Garden.

So now we had Constable Saunders as a pal. Cotta took a snapshot of us standing in front of the cafe. I like to be seen with important people.

This photo played an interesting role in a meeting I had in New York about 1933 with Tex Rickard. I had taken my photos of Wahmonie with me to Madison Square Garden. We talked fights with Tex for a half hour and he kept eyeing my photo envelope. Finally he asked, "What you got in that?"

I handed him the picture of myself and his old-time bouncer, George Saunders, in front of the tent cafe. Said Tex, "The one with the big stetson hat is you; the other looks familiar."

"He says he's George Saunders," I said.

"My gosh," said Tex, "The old sonofagun has gotten fat—good ol' George is fat!"

And Tex tossed the photograph into a drawer of his desk with the remark, "Now, you just lost a good photo of yourself and Saunders."

Back to Wahmonie. The next day we prowled the prospect holes, among them some weathered diggings made by the Mormons many years earlier. But these early birds had overlooked the big hump of an outcrop a few hundred yards from the foot of a hill where the Wahmonie strike had been made.

That evening Joe O'Brien asked me if I'd like to attend the miners' meeting. I would. It was held in a big ragged tent on "main street." The night was cold. Two kerosene stoves gave off a little heat. The tent was packed with men and smoke.

Joe O'Brien was the M.C. There was business of the camp to discuss. Possible trouble with a rival camp just forming down the slope — where to locate the "women" when they arrived. And the one big problem: to raise funds to drag a cut-off road to the east, which would take 20 miles off the route to Las Vegas.

At this point I discovered the ease with which one can be a hero. As O'Brien started passing the hat for contributions, I thought to repay some of the camp's hospitality with a small contribution, so I wrote a check for \$50 and dropped it in. Joe looked at it and put the hat aside. "This concludes the meeting," he said, "but I just want to tell you that our guest here gave us \$10 more than the Governor did."

I couldn't resist telling that.

On the next day my checkbook was to come out again. We met Mr. Minette, subdivider of Wahmonie real estate. He and his men had dragged the streets clear of brush and had staked out town lots. If the place became another Goldfield, it would be wise to own a lot—possible site for a saloon or what have you. So we bought a lot for \$170—surface rights only—a stone's throw from the "Big Strike." We were in on the ground floor.

We bumped down the wash, throwing dust and gravel, and rushed madly home to send a telegram to Harold Gay in Mexico. ///

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Study this month's wrap-around cover for the more-than-100 interesting details of a goldrush boomtown authentically recorded by the famous Western artist, Clyde Forsythe, then order some sets for your stuck-in-the-East friends!

The interesting story of each episode in the birth and death of the Goldrush Town, as written by the artist, Clyde Forsythe, will be printed on the back of the reproductions. These may become valuable collector's items!

If you **MUST** have the original oil paintings from which the cover series is taken they can be purchased for \$6,000 plus \$240 tax! The originals are now on display in the Desert Magazine Art Gallery for free public inspection.

